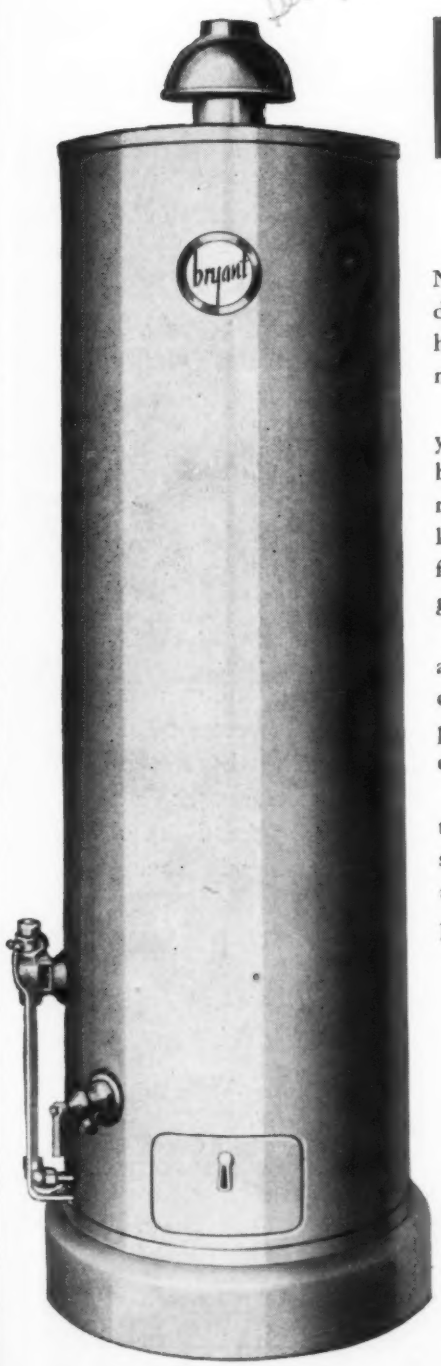
98th YEAR

AMERICAN GAS JOURNAL

NOVEMBER 1945

COPYRIGHT DEPOSIT.

THE LIBRARY OF CONGRESS
NOV 29 1945



NEW! AUTOMATIC STORAGE WATER HEATERS ADDED TO THE BRYANT HEATER LINE

No doubt, it has come your way, too . . . that simple request so difficult to fulfill. "Give me a gas water heater as good as my Bryant home heating equipment," said the satisfied customer, "and you've made another sale!"

Certainly, that is a problem. But, not for much longer! Soon, you can supply water heating as well as home heating equipment bearing the famous Bryant name plate. Soon, the first Bryant Automatic Storage Water Heaters will begin moving off the production lines. And that means an extra sale of one of these modern models for you in almost every home where you sell Bryant automatic gas heating.

Consider the selling features of Bryant Water Heaters, too. They are completely automatic . . . super-insulated . . . flat-based for clean-around ease . . . give faster and cheaper heat transfer by passage of flue gases through a baffled tube centered in the water column . . . made in standard, de luxe streamline and table-top styles.

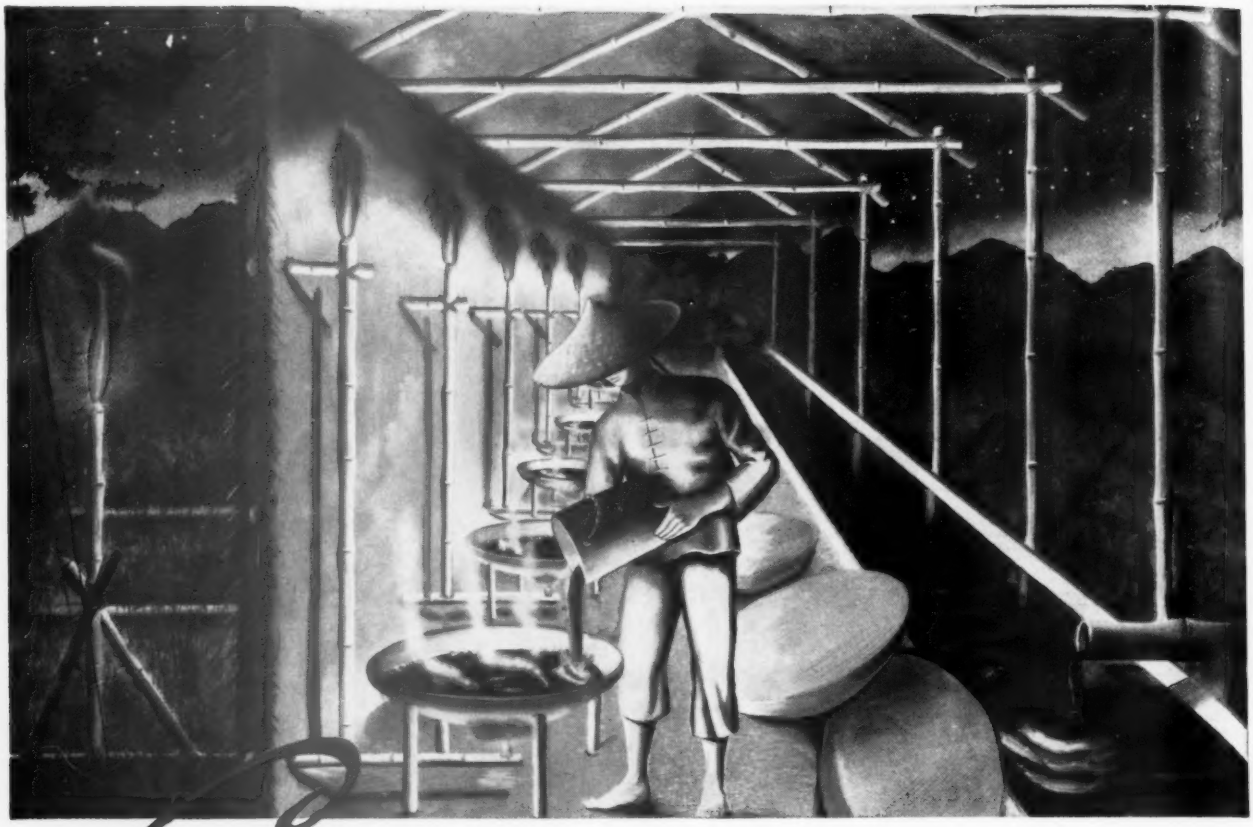
Americans know and prefer the home heating truly engineered to "let the pup be furnace man." Americans will welcome the same trouble-free service on their hot water heating job . . . *as well as the man who sells Bryant Automatic Storage Water Heaters!*

Bryant Heater Company, 17825 St. Clair Ave., Cleveland 10, Ohio
One of the Dresser Industries

bryant
GAS
HEATING

LET THE PUP BE FURNACE MAN

NOV 28 1945



Clever these Chinese

They First Put Gas to Work!

Among the ancients, the Chinese are credited with being the first to turn gas to practical use. Ingeniously, they conducted gas, found escaping from beds of soft coal, through bamboo pipes to a salt works. Here crude burners evaporated solutions of brine to recover the salt. Later gas was brought to Pekin where it was used for illumination. Thus, to the Chinese, go first honors for putting gas to work.

Since then gas has been at work incessantly and in ever-increasing volumes. Gas researchers are continually finding new uses for this clean, convenient, economical fuel. Many such applications have been made possible through measurement and control developments that originated in the laboratories of the EMCO organization.

Pittsburgh Equitable Meter Company
. . . . . **Pittsburgh 8, Pa.**

Partners in progress
GAS THE CLEAN, [illegible]ENIENT, ECONOMICAL [illegible]EL
EMCO EQ[illegible]PMEN[illegible] FOR GAS MEASUR[illegible]ENT AND CONTROL

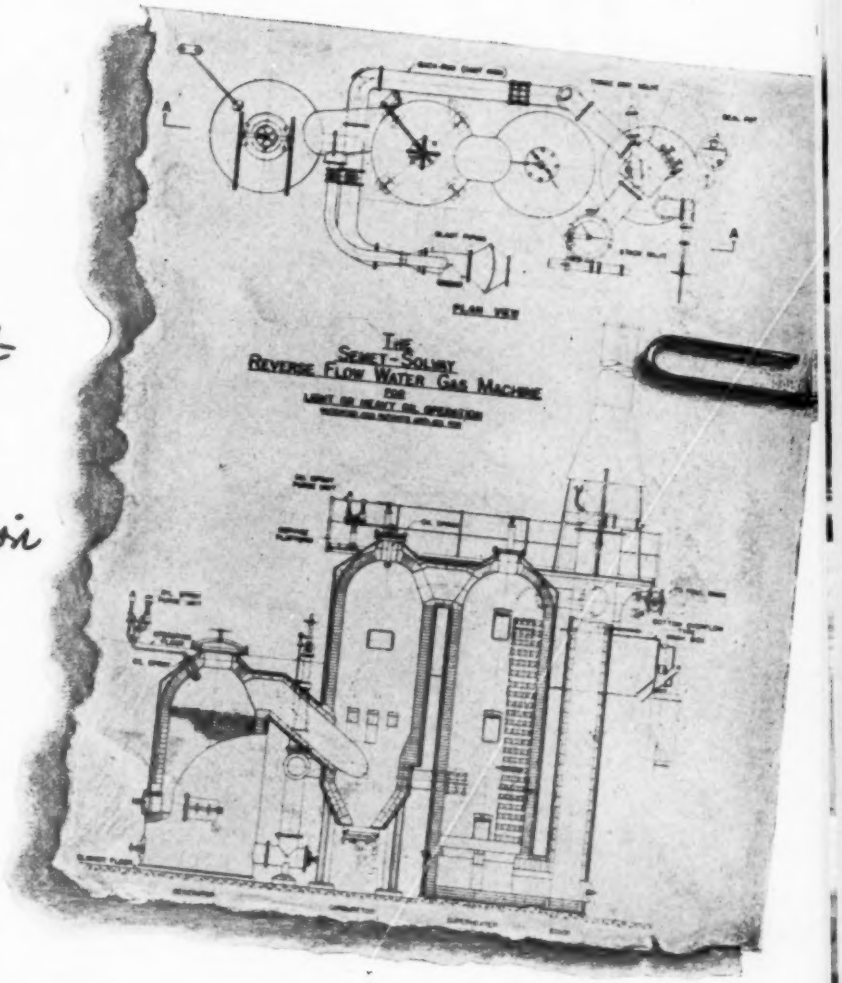
BEST ~~BETTER~~ GAS DOES IT

SEMET-SOLVAY ENGINEERING CORPORATION

40 Rector Street — New York, N. Y.

H. B. P.
For our next ad why not just show the attached diagram and give the following complete list of installations - every one of them successful - so that anyone interested can see where he can get first hand information direct from a user. That ought to convince 'em.
R. P. C.

OK
Good Idea
H. B. P.

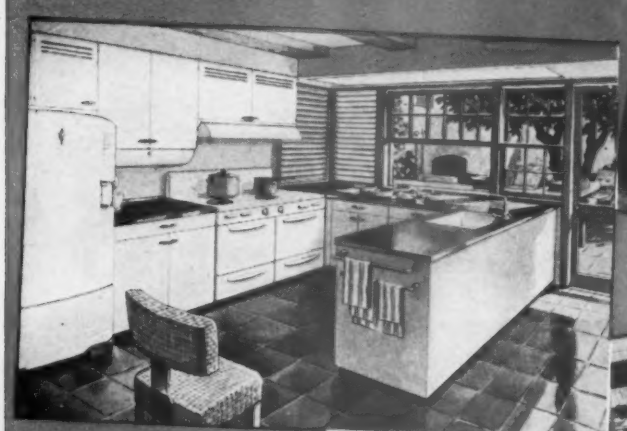


	Size Of Machine		Size Of Machine
Springfield, Massachusetts	10' 6"	Waterloo, Iowa	9' 0"
Salem, Massachusetts	8' 0"	Brockton, Massachusetts	10' 0"
Fond du Lac, Wisconsin	8' 0"	Fall River, Massachusetts	11' 0"
Niles Center, Illinois	12' 0"	Norwich, Connecticut	8' 0"
Portland, Maine (2 Machines)	10' 0"	Appleton, Wisconsin	7' 0"
Holland, Michigan	6' 6"	Savannah, Georgia	9' 0"
Beloit, Wisconsin	9' 0"	Jacksonville, Florida	11' 0"
Kalamazoo, Michigan	10' 0"	Greenfield, Massachusetts	7' 0"
Dover, New Jersey	7' 0"	Derby, Connecticut	8' 0"
Bay Shore, Long Island, N.Y.	11' 0"	Derby, Connecticut	8' 0"

AMERICAN GAS JOURNAL, November, 1945. Vol. 163, No. 5. Published monthly by American Gas Journal, Inc., at 34 North Crystal St., East Stroudsburg, Pa. Executive and Editorial offices at 53 Park Place, New York 7, N. Y. Entered as second-class matter, October 7, 1928, at the post office at East Stroudsburg, Pa., under the Act of March 3, 1879. Printed in U. S. A.

NOW SERVEL OFFERS YOU

TODDLER'S KITCHEN—Showing how a homemaker can adapt her kitchen to the need for supervising activities of a runabout youngster.

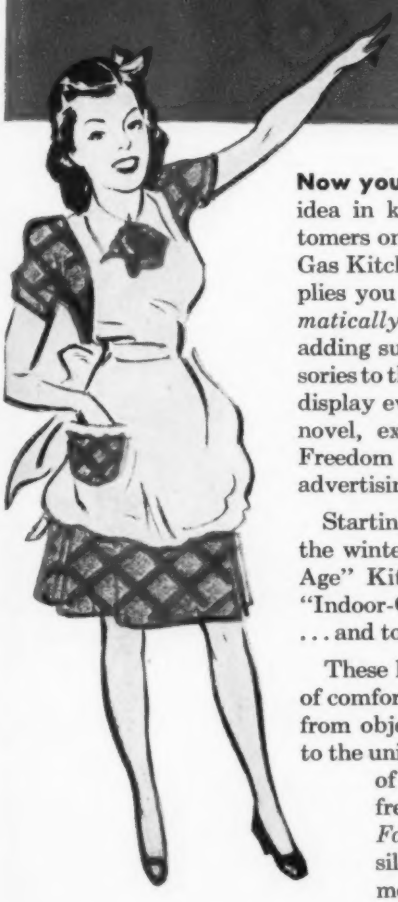


INDOOR-OUTDOOR KITCHEN—Practical ideas for families who like to eat their meals outdoors.

TEEN-AGE KITCHEN—Planned so teen-age boys and girls can enjoy their own afternoon activities without interrupting dinner preparations.

HOBBY KITCHEN—Where the garden comes indoors to be enjoyed all day. Easy to care for!

A NEW KITCHEN DISPLAY SERVICE



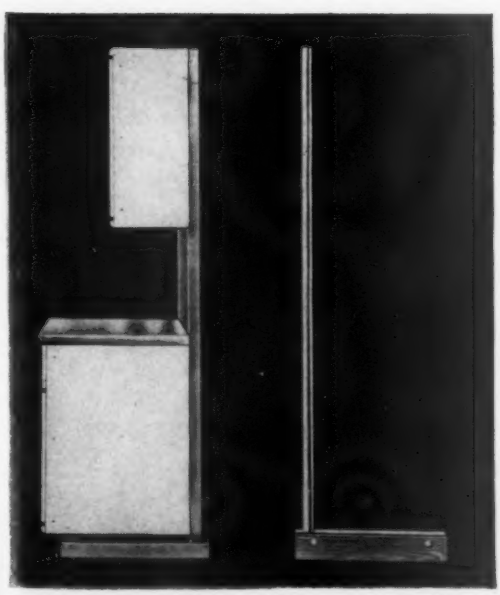
Now you can take advantage of a new idea in kitchen display to sell your customers on the modernity of New Freedom Gas Kitchens. In one package, Servel supplies you with basic equipment for a *dramatically different display kitchen*. By adding supplementary cabinets and accessories to this Servel set, you can change your display every season. Each kitchen will be novel, exciting—modeled after the New Freedom Gas Kitchens shown in Servel advertising and promotional material.

Starting with the "Toddler's" Kitchen in the winter . . . you can change to the "Teen-Age" Kitchen in the spring . . . to the "Indoor-Outdoor" Kitchen in the summer . . . and to the "Hobby" Kitchen in the fall!

These kitchens feature new, undreamed-of comforts. They stay clean, cool, and free from objectionable cooking odors—thanks to the unique air control cabinet that's part of the *Cooking Unit*. They keep food fresher and more palatable in the *Food Conditioning Unit*—where the silent Gas Refrigerator is supplemented by a dry storage cabinet in which cereals and crackers stay appetizingly crisp. And these Unified Kitchens make dishwashing easier because the *Cleaning Unit* includes . . . in addition to an efficient sink . . . convenient areas for soaps, brushes, steel wool and other cleaning materials.

Your basic set of display materials will include all you need to set up your first kitchen. You will receive base cabinets, wall cabinets, air control cabinet, food conditioning cabinet—and complete blueprints for setting them up. (You supply range and refrigerator from stock and purchase simple decorative accents.) At the end of the season, you can easily dismantle the first kitchen . . . thanks to the "Standfree" display fixtures that simplify removal of cabinets. By adding a few parts and substituting other decorative accents, you can rearrange the same basic equipment to create an entirely different-looking kitchen with new inspiration.

Servel Unified Gas Kitchen displays are being prepared. Order yours now. And be first with a dramatically exciting display of the Servel-designed New Freedom Gas Kitchen.



The secret of easy set-up and removal of Servel Display units is these "Standfree"-type display fixtures that hold unit securely, yet make dismantling easy.

Servel Inc. EVANSVILLE 20 INDIANA

©OPR., 1945, SERVEL, INC.

COALS well established because of sheer dependability respecting analytical and performance properties.

These coals have in part maintained enviable reputations in By-product Coke Plants, Coal Gas Retort Plants, Gas Producer Plants and Steam Generating Plants down through the years of both peace and war.

The following table shows the Trade Names and certain properties of these coals as filed with the Statistical Bureaus of the Bituminous Coal Division.

		ANALYSES ON DRY BASIS AND MOISTURE AS SHIPPED							
Trade Name	Coal Seam	Size	H_2O %	V.M. %	F.C. %	Ash %	S %	B.T.U.	A.S.T. °F.
Roda	Taggart	R.O.M.	2.00	36.00	61.00	3.00	.54	15025	2200
Roda	Taggart	¾x0	2.50	35.90	61.10	3.00	.49	14975	2175
Dendron	Marker	R.O.M.	2.00	36.60	60.80	2.60	.65	15000	2400
Dendron	Marker	¾x0	3.00	36.00	60.62	3.38	.65	14900	2390
Stonega	Imboden	R.O.M.	3.00	35.00	58.50	6.50	.77	14100	2600
Stonega	Imboden	1¼x0	3.00	35.00	58.50	6.50	.77	14100	2600
Premix	Marker &	2x0	3.00	34.80	59.45	5.75	.85	14433	2675
Premix	Imboden	1½x0	3.00	34.85	59.45	5.75	.85	14433	2675
Westmoreland-Criterion (Part Washed)	Pittsburgh	R.O.M.	3.00	34.50	58.50	7.00	.80	14200	2600
	Pittsburgh	1¼x0	4.00	33.80	58.60	7.60	.90	14100	2550
Crozer	Poca., #3	R.O.M.	2.75	17.60	76.30	6.10	.63	14800	2290
Crozer	Poca., #3	1¼x0	3.95	17.85	76.15	6.00	.66	14850	2295
Admiralty	Beckley	R.O.M.	2.25	18.52	75.76	5.72	.91	14781	2830
Admiralty	Beckley	1¼x0	2.35	18.73	75.64	5.63	.83	14810	2870
Admiralty	Sewell	R.O.M.	3.00	19.16	77.04	3.80	.91	15148	2450
Admiralty	Sewell	1¼x0	2.96	19.37	76.33	4.30	.89	15052	2520

Concerning the Production of these Coals

Roda, Dendron, Stonega & Premix Coals are produced by Stonega Coal & Coke Co., Big Stone Gap, Va. All mines are on the Interstate Railroad with the exception of Imboden Mine which is on the Southern Railway. The Interstate Railroad connects with the Southern and the L. & N. at Appalachia, Va., with the N. & W. at Norton, Va., and with the C. C. & O. at Millar Yard, Va.

	Roda Mine	Derby Mine	Dunbar Mine	Stonega Mine	Imboden Mine
Roda Coal	Index #415	Index #160	Index #671		
Dendron Coal	Index #672	Index #517	Index #179		
Stonega Coal				Index #451	Index #250
Premix Coal	Index #3960	Index #519			

Westmoreland Criterion Coal is produced by Westmoreland Coal Co., Irwin, Pa., at its Hutchinson and Magee Mines, Indices No. 95 and No. 135, respectively; both on the Pennsylvania R. R.

Crozer Coal is produced by Crozer Coal & Coke Co., Elkhorn, McDowell Co., W. Va. at its Crozer Mine, Index No. 49, located on N. & W. Railway. Also by Page Coal & Coke Co., Pageton, McDowell Co., W. Va. at its Page Mine, Index No. 136, located on N. & W. Railway.

Admiralty Coal is produced by Crab Orchard Imp. Co., Eccles, Raleigh Co., W. Va. The Beckley seam coal is produced at Eccles 5 Mine, Index No. 62 and the Sewell seam coal is produced at Eccles 6 Mine, Index No. 63. Both of these mines are on the C. & O. and the Virginian Railway.

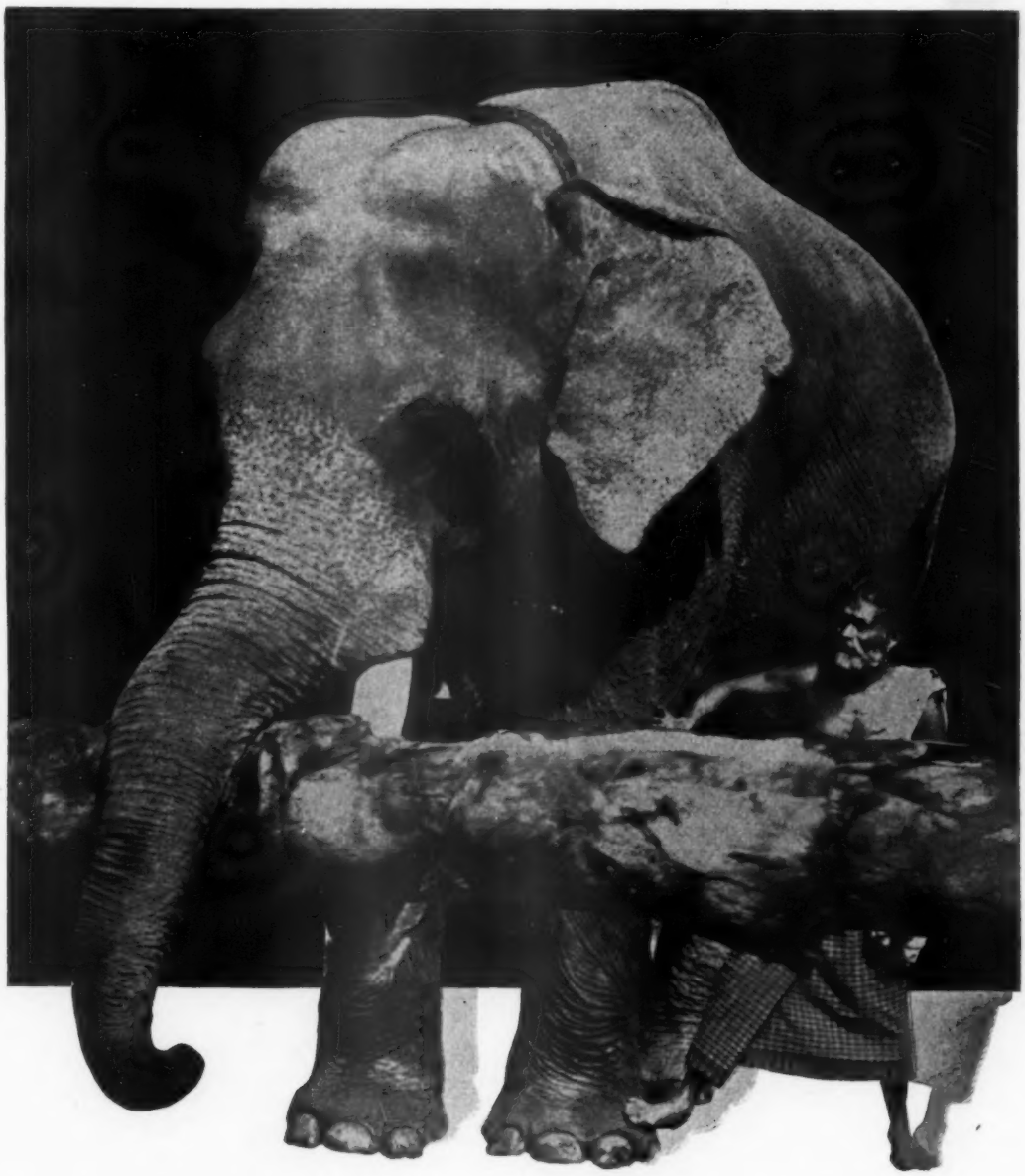
Glenbrook Mine in Harlan County, Kentucky on the L. & N., now under development, will produce Taggart and High Splint seam coals in 1946. Roda coal is mined out of the Taggart seam and the High Splint seam coal will be particularly suitable to the water gas process.

Competent technical service always available without obligation.

GENERAL COAL COMPANY

123 SOUTH BROAD STREET PHILADELPHIA 9, PA.

BRANCHES: BLUEFIELD, W. VA., BOSTON, BUFFALO, CHARLOTTE, N. C., CINCINNATI DETROIT, NEW YORK, NORFOLK, PITTSBURGH



CAPACITY . . .

. . . the power to hold, to take.

With a gas-purifying material, capacity refers to its efficiency in absorbing Hydrogen Sulphide. LAVINO ACTIVATED OXIDE, having an extremely high percentage of active ferric oxide, is a highly efficient gas-purifier. In fact, its thorough, quick and uniform action has convinced hundreds of gas plant engineers that, pound for pound, it absorbs *more* H_2S than any other gas-purifying material they have ever tried.

This is the significant reason for the widely recognized superiority of LAVINO ACTIVATED OXIDE.

LAVINO "ACTIVATED" OXIDE

Supplied unmixed; or ready-mixed in "Sponge" form.

E. J. LAVINO AND COMPANY

1528 WALNUT STREET, PHILADELPHIA 2, PA.

ALL for one...

The national advertising, merchandising and research program of the AGA deserves the utmost support of every person in the industry. "Gas—the Wonder Flame," is more than a slogan. It is a promise.

Modernization of appliances and equipment has made great strides toward keeping pace with our post-war opportunities.

...and one for ALL!

Similarly, the cooperative promotion of manufacturers, including a wide expansion of dealer outlets, will add impetus to the total effort for more and better gas customers.

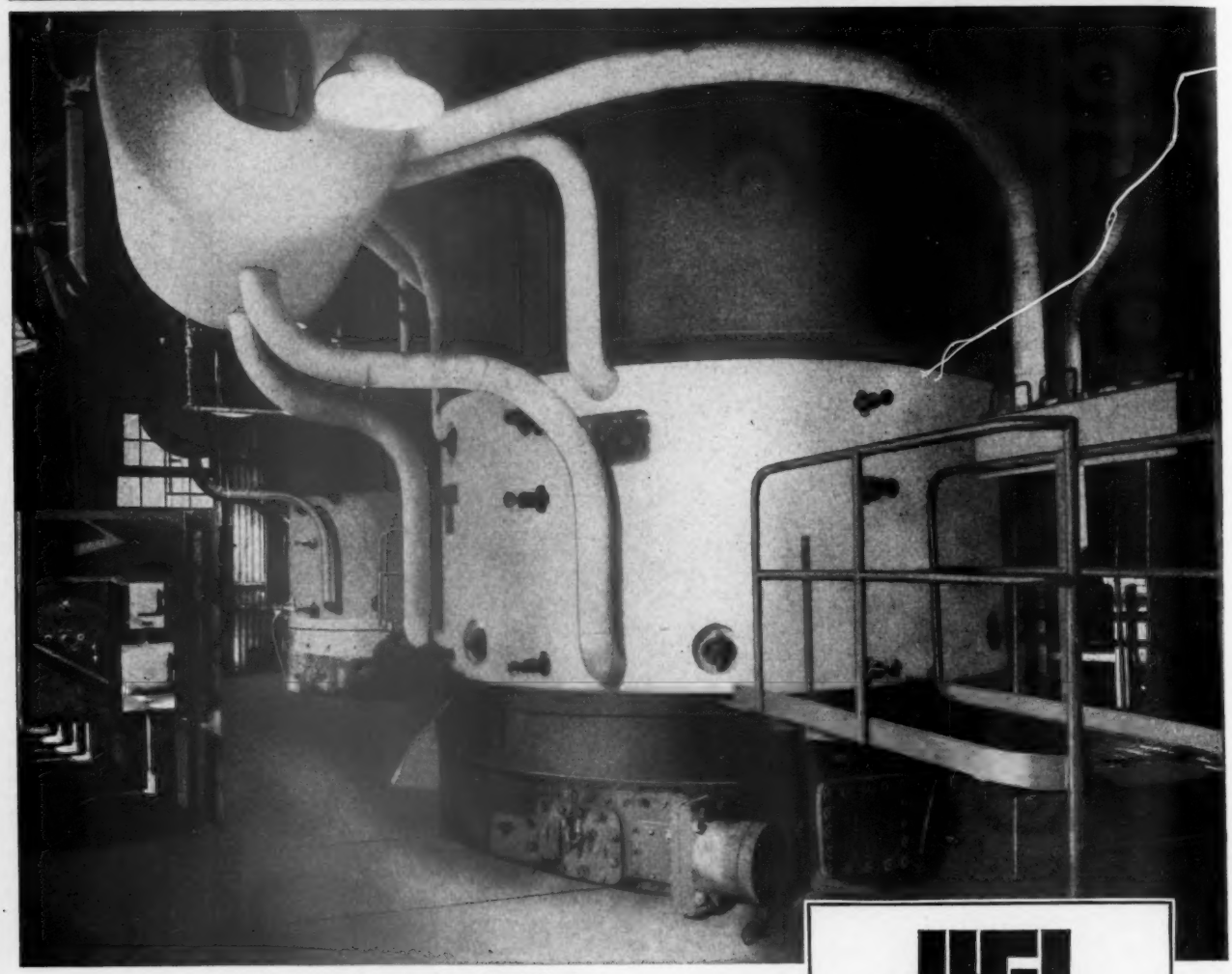
Backed by each of us in the spirit of "all for one and one for all," every branch of the industry will benefit.

Quality ranges, built to CP standards, lead the way.

AMERICAN METER COMPANY
INCORPORATED (ESTABLISHED 1836)

Albany · Baltimore · Birmingham · Boston · Chicago · Dallas · Erie · Houston · Kansas City · Los Angeles · New York · Philadelphia · Pittsburgh · San Francisco · Tulsa

U.G.I. MODEL "D" MECHANICAL GENERATOR



U. G. I. Mechanical Generator Sets at Philadelphia, Pa.

UNITED ENGINEERS provides you with UGI-designed apparatus which gives high efficiency, high capacity, and ease and flexibility of operation to economically meet the plant needs with the fuels available for use.

UNITED ENGINEERS provides you with an organization experienced in all of the problems of present day construction to design, construct and place into operation the facilities necessary for gas plant expansion.

UGI Equipment

UNITED SERVICES PROVIDE

EXPERIENCE IN DESIGN
United has over 50 years experience in gas plant design.

EFFICIENT APPARATUS
United has pioneered major developments in water and coal gas production.

ECONOMICAL CONSTRUCTION
United has large well organized forces for gas plant and general construction work.

EXPERIENCE IN OPERATION
United has experienced plant operators for securing most efficient results.

UNITED ENGINEERS & CONSTRUCTORS INC

NEW YORK PHILADELPHIA CHICAGO

VOLUME 163
NUMBER 5

AMERICAN GAS JOURNAL

ESTABLISHED 1859

WHOLE
NUMBER 3861

NOVEMBER 1945

PUBLISHED MONTHLY BY
AMERICAN GAS JOURNAL, Inc.
53 Park Place, New York 7

S. G. KRAKE, *President and Treasurer*

M. E. KELLEHER, *Secretary*

S. G. KRAKE, *Managing Editor*

H. T. MATTHEW, *Business Manager*

JAMES C. MUNN, *Midwest Representative*
10515 Wilbur Ave., Cleveland 6, Ohio
Tel. Sweetbrier 0052

SCOTT KINGWILL, *Western Representative*
35 E. Wacker Drive, Chicago 1, Ill.
Tel. State 4227

Copyright, 1945, American Gas Journal, Inc.

Subscription $2.00 per year U.S.A.; $3.00 Canada; $4.00 Foreign. Single copies, 25 cts.

CONTENTS

27th Annual Meeting of the American Gas Association 13

Leadership and American Business—R. W. Gallagher 21

Developments in Carburetted Water Gas—C. A. Schlegel 27

Gild Presents "Oscar" to Major Forward 32

Conversion from Coal Gas to 100% Propane-Air Gas—H. K. Seeley 35

Product Designs of Today—Ranges and Water Heaters 41

The Industrial Sales Staff—Fred A. Herr 52

Finance Plan for Appliance Sales 54

Legal Duty to Extend Gas Service—Leo T. Parker 55

Abstracted Articles of Current Interest to the Industry 58

Gas Appliance Cooking School 64

Operating Division Meeting of New England Gas Assn. 66

News of the Gas Industry 70

Having Trouble making PEAK LOAD ?

FOUR 50,000 CFPH
GASAIRS
ready at a minute's notice summer and winter to provide for additional peak up to 200,000 cfph of any BTU desired.

GASAIR for Peak Load Insurance

COMPLETELY AUTOMATIC
No Holders · No Buildings
No Power · No By-products

For Utility and Industry, large and small — GASAIRS will supply peak load augmentation at lower cost per MCF in plant investment than any other equipment on the market.

NOW OPERATING IN TWENTY EIGHT STATES
Write today for Details . . . No Obligation

DISTRIBUTORS · PACIFIC · GAS · CORP.
INTERNATIONAL BLDG. · ROCKEFELLER PLAZA · New York

NOVEMBER 1945

AMERICAN GAS JOURNAL

VOLUME 163 No. 5

27th Annual Meeting of the American Gas Association

RESEARCH, Promotion and Utilization expressed the outstanding theme of the Twenty-Seventh Annual Convention of the American Gas Association, held in New York, Oct. 24th and 25th.

President, J. French Robinson, in his address, said:

"The strength of our Association is derived from its very close and literal integration with the gas industry, in its entirety. Our Association has the perhaps unique distinction of functioning as, and with, the industry which it represents to an unusual degree.

"Let me give as an illustration the Association's plan for research and promotional development. This is much more than a plan; it is a program which has already gone into action as a very big and comprehensive operation. It has for its purpose not only to increase the use of gas but also to rivet the public's attention upon the prestige of this great industry. Moreover, and this is very much to the point, the promotion plan has its roots in the only soil which can support such an undertaking, namely, in the practical utilization of the product. All is in a direct line, through the entire, complex industry, straight to the consumer. Hence, it is as significant as it is correct that research and promotion be unified and centralized so that they function together, directed by operating people experienced in the diverse and nation-wide field of gas production, storage, transportation, distribution and utilization."

In discussing the importance of the meeting to the industry, he stated:

"Never was there a more important meeting. Never was there

J. French Robinson

greater necessity for a strong organization, planned and put together for action, purposeful, planned, socially and industrially intelligent action, than the present. In carefully weighed words I believe we should tell ourselves and keep the thought continuously with us that we have entered a period as critical as that of the war. We must make that thought as much part of us that no reminder will be necessary. It must be automatically and constantly the key to all our thinking and our actions. It must be our subconscious selves.

"In fact, the war was only the violent, explosive prelude to this critical period. And the war itself must be regarded as part of a long period which led up to it.

"We are too apt to abuse words these days by using them without a definite knowledge of their meaning. So I wish carefully to point out that this is a period upon which we are entering, not one which ended on "V" Day—or any other day. And it is, like the war, only one of a series in a much, *much* longer period, the end of which is not known. A period is a *duration* of time—not a mark of its ending.

"And crisis means literally a turning point, as a crossroad or a fork in the river. There are many crises or turning points in a critical period. Are we on the right road? And, Which way do we turn here? These are not questions to be asked —and answered—once or twice, but many, many times. Luckily and by counsel together we may at least keep going in the right *direction*. The trails ahead of us are not clear. In places there may be no trails. A pause to think things over may be the part of wisdom."

In reviewing the activities of the A.G.A. during the past year, he said that the association had for many months been preparing for the end of the war period, and that it was ready when it came. He extended the appreciation of the meeting to Major Forward, retiring Managing Director of the A.G.A. of what he has meant to and what he has done to and for "this great industry of ours."

He also congratulated the Association on having been able to secure H. Carl Wolf, as managing Director, whose duties will include executive responsibility for the promotional activities in connection with Association affairs.

Ralph W. Gallagher, Chairman of Board, Standard Oil Co. of New Jersey, and a past president of the A.GA.. presented an address on "New Responsibilities for Industry," which is printed in this issue of the *Journal*.

E. J. Boothby

R. H. Hargrove

Hudson W. Reed

Newly Elected Officers American Gas Association, 1945-46

President—Everett J. Boothby, vice-president and general manager, Washington Gas Light Company, Washington, D. C.

First Vice-President—R. H. Hargrove vice-president, United Gas Pipe Line Company, Shreveport, La.

Second vice-President — Hudson W. Reed, president, The Philadelphia Gas Works Company, Philadelphia, Pa.

Treasurer—Edward F. Barrett, president, Long Island Lighting Company, Mineola, N. Y.

Directors—Two Year Terms

J. French Robinson, president, The East Ohio Gas Company, Cleveland, Ohio.

R. E. Fisher, vice-president, Pacific Gas & Electric Company, San Francisco, Calif.

Walter C. Beckjord, president, Cincinnati Gas & Electric Company, Cincinnati, Ohio.

Charles M. Cohn, president and chairman of the board, Consolidated Gas Electric Light & Power Company of Baltimore, Baltimore, Md.

E. H. Eacker, vice-president, Boston Consolidated Gas Company, Boston, Mass.

J. N. Greene, president, Alabama Gas Company, Birmingham, Ala.

H. E. Handley, president and general manager, Handley-Brown Heater Company, Jackson, Mich.

D. A. Hulcy, president, Lone Star Gas Company, Dallas, Texas.

Henry H. Morse, vice-president, Florence Stove Co., Gardner, Mass.

E. P. Noppel, general consultant, Ebasco Services, Incorporated, New York, N. Y.

Clifford E. Paige, Chairman of the Board and president, The Brooklyn Union Gas Company, Brooklyn, N. Y.

E. J. Tucker, director and general manager, Consumers Gas Co. of Toronto, Ontario, Canada.

Section Officers

Accounting Section—Chairman—E. F. Embree, general auditor, New Haven Gas Light Company, New Haven, Conn.; Vice-chairman—Leith V. Watkins, secretary-controller, Panhandle Eastern Pipe Line Company, Chicago, Ill.

Residential Gas Section — Chairman—J. J. Quinn, sales manager, Boston Consolidated Gas Company, Boston, Mass.; Vice-chairman—Wallace M. Chamberlain, sales manager, Michigan Consolidated Gas Company, Grand Rapids, Mich.

Industrial & Commercial Gas Section—Chairman—Harry A. Sutton, Asst. general industrial fuel representative, Public Service Electric & Gas Company, Newark, N. J.; Vice-chairman—Karl Emmerling, asst. general superintendent, The East Ohio Gas Company, Cleveland, Ohio.

Manufacturers' Section — Chairman—Frank H. Adams, general manager, Surface Combustion, Incorporated, Toledo, Ohio.

Publicity & Advertising Committee—Chairman—Charles A. Tattersall, vice-president, Niagara Hudson Power Company, Syracuse, N. Y.

Technical Section — Chairman—Lester J. Eck, vice-president, Minneapolis Gas Light Company, Minneapolis, Minn.; Vice-chairman—C. S. Goldsmith, engineer of distribution, The Brooklyn Union Gas Company, Brooklyn, N. Y.

The afternoon session on the 24th, was devoted to a symposium, led by Ernest R. Acker, Chairman, Special Committee on Gas Industry Research and Promotional Plan and President, Central Hudson Gas and Electric Corporation, Poughkeepsie, N. Y.

Mr. Acker introduced the Chairman of each Committee, who in turn reported the progress and accomplishments during the past seven months, as the committee work really got under way about March 1st. of this year.

Each of these committees has done a remarkable job. It is understood the reports will soon be printed and distributed. It is urged that every gas company study them carefully and be prepared to support the work being done to the fullest extent. It is only through this active cooperation by all that the objectives aimed at can be attained. The committees reporting were:

Gas Production Research

P. T. Dashiell, Chairman, Gas Production Research Committee, and Vice-President, The Philadelphia Gas Works Company, Philadelphia, Pa.

Utilization and General Research

E. P. Noppel, Chairman, Coordinating Committee on Research, with Ebasco Services Incorporated, New York, N. Y.

Edward F. Barrett
Treasurer A.G.A.

National Advertising

J. J. Quinn, Member of Committee on National Advertising, and General Sales Manager, Boston Consolidated Gas Company, Boston, Mass.

Promotion

D. A. Hulcy, Chairman, Promotional Committee, President, Lone Star Gas Company, Dallas, Texas.

Lyle C. Harvey, Chairman, Promotional Committee and President, Association of Gas Appliance and Equipment Manufacturers, and President, The Bryant Heater Company, Cleveland, Ohio.

H. Vinton Potter, Director, New Freedom Gas Kitchen Program—American Gas Association and Association of Gas Appliance and Equipment Manufacturers, New York, N. Y.

"Progress and Developments in the Natural Gas Investigation"

A report by Walter C. Beckjord, Chairman, Committee on Investigation of Conservation and Utilization of Natural Gas and President, Cincinnati Gas and Electric Company, Cincinnati, Ohio.

Report of Time and Place Committee

Charles G. Young, Chairman, reported that his committee recommended that the 1946 Annual Convention be held at Atlantic City, N. J. and set the tentative date as week of October 7th. It also recommended that there be an exhibit held in connection with the meeting.

Sectional Chairmen 1945-46

E. F. Embree

J. J. Quinn

Harry A. Sutton

Frank H. Adams

Chas. A. Tattersall

Lester J. Eck

General Sessions Thursday, Oct. 25

"New Responsibilities of Management" was the subject of a paper presented by Hudson W. Reed, President, The Philadelphia Gas Works Co., Phila., Pa.

"Today," Mr. Reed said, "most gas operating companies are riding on the crest of the waves of prosperity and apparent security. We have witnessed, during the past several years, opportunities that we had never dreamed could happen. After years of struggling to secure a foothold on the house heating business I have witnessed the amazing spectacle of seeing house heating solicitors converted first into desk order takers and then into customer contact men explaining to thousands of prospects why, due to curtailed manpower and limited heaters available, gas heating installations must necessarily be postponed until the following year. I have seen prospective industrial consumers, who for years were skeptical of the value of gas as an industrial fuel, develop uses for industrial gas that our industrial salesmen had considered possible but not probable.

"Now, what are some of the responsibilities necessary to maintain our present high standing in the utility field? Much of the future scope and direction of our industry depends upon the course we set today. The general acceptance of gas as the best industrial fuel is such that this class of business requires little comment. General acceptance of gas for house heating is assured provided the required service is forthcoming. It is the retention and further promotion of the residential consumer which will require the business philosophy spoken of so many times in postwar plans but never fully developed.

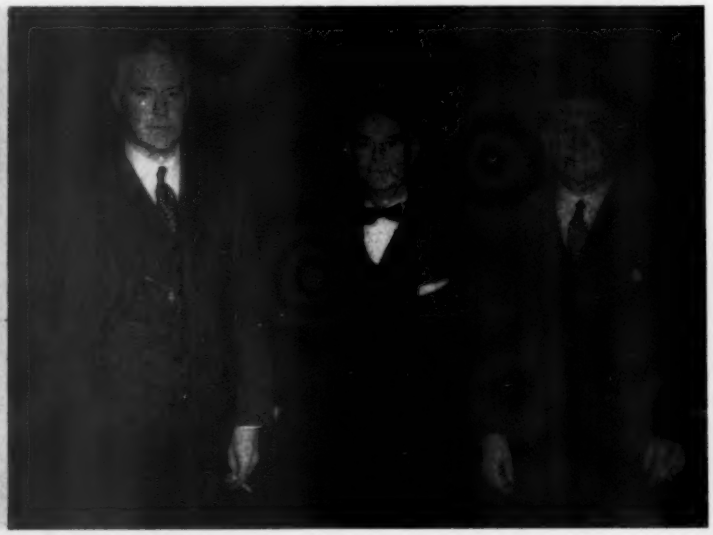
"Our immediate responsibility for maintaining our supremacy in the domestic field is to see that the convenience and satisfaction that our customers experience with our fuel is better than that which they receive, or believe that they would receive, from competitive services. The results obtained will ultimately determine our success or failure.

"We are definitely responsible for the kind of advertising used. If it is good, it can be of great help; conversely, it can do irreparable damage if it is of the wrong type. In developing advertising campaigns, one is apt to believe that all advertising, if attractive and pleasing to the eye or ear, has the same effect for all services or commodities. This belief is erroneous. Millions of smokers may be enticed to purchase a new brand of cigarette through flamboyant advertising. If the product is found wanting it is cast aside and, due to the cheapness of it, no resentment is experienced. However, if we advertise a domestic appliance as the last word in reliability and convenience, and it proves otherwise, or if the appliance is as advertised but is not serviced properly, or if we make claim of performance or the elimination of work that cannot be substantiated, we are laying up trouble for ourselves during the entire life of the appliance. While I am in full sympathy with an aggressive program, we must carry the responsibility for every statement made in both local and national advertisements.

"We are responsible for equitable gas rates, consistent with good service, reasonable return on investment and fair wages. Extremely low rates are not necessarily a requirement for a successful company. Customers are generally willing to pay a fair price for a service that satisfies them and will reject a service that is not satisfactory, regardless of cost.

"We are definitely responsible for keeping inferior appliances on our lines down to the irreducible minimum. For appliances sold by the utility there is no problem. The public can be made conscious of value received and will willingly pay a fair price for appliances of superior performance. The substantial volume of gas refrigerator sales, notwithstanding a premium price, is conclusive evidence that, if the product is right, the sales price is secondary. We are likewise responsible to see that dealers sell only high grade appliances, even though such a sales plan cuts deeply into the sales made by the utility. Whether we like it or not, appliance dealers are a permanent part of our domestic economy. They can sell either gas or competitive appliances; therefore, the degree of success in offsetting competition is governed to a large extent by the influence the utility can bring to bear on the dealers to sell not merely gas appliances but approved ones.

"Another equally important factor is the standard of performance of the appliances provided by our manufacturers. Because of this, the relationship between the appliance manufacturer and ourselves is a matter of prime importance to our industry. Such relationship is of equal im-



Left to right: Robert E. Ginna, Rochester, N. Y.; Major Alexander Forward, New York; Irving K. Peck, Binghamton, N. Y.; Ernest R. Acker, Poughkeepsie, N. Y., George S. Hawley, Bridgeport, Conn.; William F. Barrett, New York.

portance as that with our customers and employees. Too often the utility decision with respect to appliance promotion and purchase has been of a nature that would tend to damage this relationship. There is need in our industry to correct this condition if we are to achieve our ultimate goal of complete customer acceptance of our services.

"Manufacturers have, with justification, complained that the many and at times conflicting and capricious individual requirements of utilities place them under a manufacturing disadvantage resulting in interrupted production and higher costs. I am in full sympathy with their point of view, and believe that the utilities have an obligation to the manufacturers to reduce their individual requirements to a defendable minimum. Utilities serving gases of approximately the same type should combine their requirements so as to provide a single standard for the manufacturers to meet. The current effort being made to standardize the house heating equipment requirements for manufactured gas is a major step in this direction.

"Another responsibility to the manufacturer of better appliances is to support him in the promotion and sale of his product. In this connection, it is my opinion that those manufacturers who do not build competitive equipment are most deserving of our support. Such manufacturers should not be forced to sell their product at a price that will make it impossible to earn a fair return, or to keep ahead in their development work. To drive such manufacturers to a no-profit point is to kill the goose that lays the golden eggs.

"In conclusion, may I state that I fully realize that I have not developed a single new technique in gas utility policy of operation. I also realize fully that each utility has its own specific operating problems. However, there must be a philosophy of operation that will, to some extent, be beneficial to all companies. The policies I have outlined, simple and homely as they may seem to be, have proved successful for our company—they may likewise help you."

Gov. Meadow's Remarks

The Honorable Clarence W. Meadows, Governor of West Virginia, addressed the meeting Thursday. He said in part, "West Virginia is, one of the most important segments of that part of the national economy in which you, and the companies you represent, are directly interested. We have a big stake in the production and consumption of natural gas, for we are not only large suppliers of that commodity but, as the first state of the union in the production of bituminous coal, we play perhaps just as important a part in the production of manufactured gas. Coal and natural gas are our two greatest natural resources and, as such, furnish by far the greatest segment of employment opportunities for our people.

"Discovery of oil and gas in West Virginia dates from 1860 when the first commercial development began. Although developments proceeded somewhat slowly for the immediate years thereafter, new locations in 1889 heralded a wave of successful exploration in shallow sands with a corresponding upward production until, in 1917, West Virginia reached the position of first state in the union in production of natural gas. The development of the great gas fields of the mid-continent and southwest since that time have caused the state to recede in its quantity ranking.

"The Minerals Yearbook of the United States Bureau of Mines discloses that, as of December 31, 1942, there were 56,160 producing gas wells in the United States. Of this number, 14,100 or approximately 25 percent of the total for the United States, were located in the State of West Virginia. Yet, in that same calendar year, according to the Minerals Yearbook, West Virginia produced but slightly more than 7 percent of the total of natural gas produced in the nation. It is probable that there is some variation in these figures as of this date, but the 1942 figures are sufficient to illustrate the point which I wish to make here—namely—that this startling disparity between the percentage of total production and the percentage of active wells gives clear proof of the extensive nature of drilling and other producing operations in West Virginia and the consequent benefits in employment and income to large numbers of our people. This disparity also means, as you gentlemen of the industry easily understand, that while our wells, for the most part, are comparatively small in quantitative production, their drilling and operation is economically sound because of the high quality of the gas produced and its favorable accessibility to great domestic and industrial markets."

Departmental and Sectional Meetings

The departments and sections held evening meetings at which routine matters were discussed. Time and place of meetings follow.

Manufactured Gas Department—E. J. Boothby, Chairman

Managing Committee: 6:00 P.M., Wednesday, October 24, Hotel Waldorf-Astoria.

Natural Gas Department—R. H. Hargrove, Chairman

Managing and Advisory Committees: 6:30 P.M., Tuesday, October 23, Engineers Club.

Accounting Section—C. E. Packman, Chairman

Managing Committee: 4:00 P.M., Wednesday, October 24, Biltmore Hotel.

Left to right: C. E. Packman, Chicago, Ill.; O. H. Ritenour, Washington, D. C.; Edwin F. Embree, New Haven, Conn.; Edward P. Noppel, New York; Norman B. Bertolette, Hartford, Conn.; J. B. Connor, Cleveland, Ohio; A. E. Forstall, Montclair, N. J.; Percy S. Young, Newark, N. J.

Managing Committee: 1:30 P.M., Thursday, October 25, Hotel Pennsylvania.

Managing and Advisory Committees: 6:30 P.M., Tuesday, October 23, Biltmore Hotel.

Chairmen and Managing Committees, Manufactured and Natural Gas Departments

Hudson W. Reed, President, Philadelphia Gas Works, was elected Chairman of the Manufactured Gas Department of A.G.A. The Managing Committee of the Department are:

R. G. Barnett, Vice Pres. & Gen. Mgr., Portland Gas & Coke Company, Portland, Oregon; Edward F. Barrett, President, Long Island Lighting Company, Mineola, L. I., N. Y.; Alexander M. Beebee, Vice President, Rochester Gas & Electric Corp., Rochester, New York; Walter S. Byrne, General Manager, Metropolitan Utilities District, Omaha, Nebraska; H. R. Cook, Jr., Vice President, Consolidated Gas Electric Light & Power Co. of Baltimore, Baltimore, Maryland; E. H. Eacker, Vice President, Boston Consolidated Gas Company, Boston, Mass.; C. S. Goldsmith (Vice Chairman Technical Section, A.G.A.), The Brooklyn Union Gas Company, Brooklyn, N. Y.; Alfred Hirsch, Vice President, The Laclede Gas Light Company, St. Louis, Missouri; Harry L. Nickerson, Chief Engineer, The Brooklyn Union Gas Company, Brooklyn, N. Y.; E. J. Tucker, Director & Gen. Mgr., Consumers' Gas Co. of Toronto, Toronto, Canada; G. M. Johnson, General Gas Supt., Northern Indiana Public Service, Hammond, Indiana; Frederick A. Lydecker, Vice Pres., Public Service Elec. & Gas Co., Newark, New Jersey; Edward G. Boyer, Manager Gas Dept., Philadelphia Electric Company, Philadelphia, Pa.; B. T. Franck, Vice president, Milwaukee Gas Company, Milwaukee, Wisconsin; A. H. Stack, President, Tampa Gas Company, Tampa, Florida; Thomas L. Kemp, General Manager, Citizens Gas & Coke Utility Co., Indianapolis, Indiana.

R. H. Hargrove United Gas Pipe Line Co., Shreveport, La., was elected Chairman of the Natural Gas Department. The Managing Committee are:

Adams, B. C., The Gas Service Co., Kansas City, Mo.

Bennett, C. E., The Manufacturers Light & Heat Co., Pittsburgh, Pa.

Bowes, Joseph, Oklahoma Natural Gas Co., Tulsa, Okla.

Bridge, A. F., Southern Counties Gas Co., Los Angeles, Calif.

Brown, F. C., Natural Gas Pipeline Co. of America, Chicago, Ill.

Buddrus, E., Panhandle Eastern Pipe Line Co., Chicago, Ill.

Hartson, D. P., Equitable Gas Co., Pittsburgh, Pa.

Hulcy, D. A., Lone Star Gas Co., Dallas, Texas.

Lerch, F. H. (Jr.) Consolidated Natural Gas Co., New York, N. Y.

Noppel, E. P., Ebasco Services, Inc., New York, N. Y.

Parks, F. T., Public Service Co. of Colo., Denver, Colo.

Rather, C. P., Southern Natural Gas Co., Birmingham, Ala.

Rawlins, E. L., Union Producing Co., Shreveport, La.

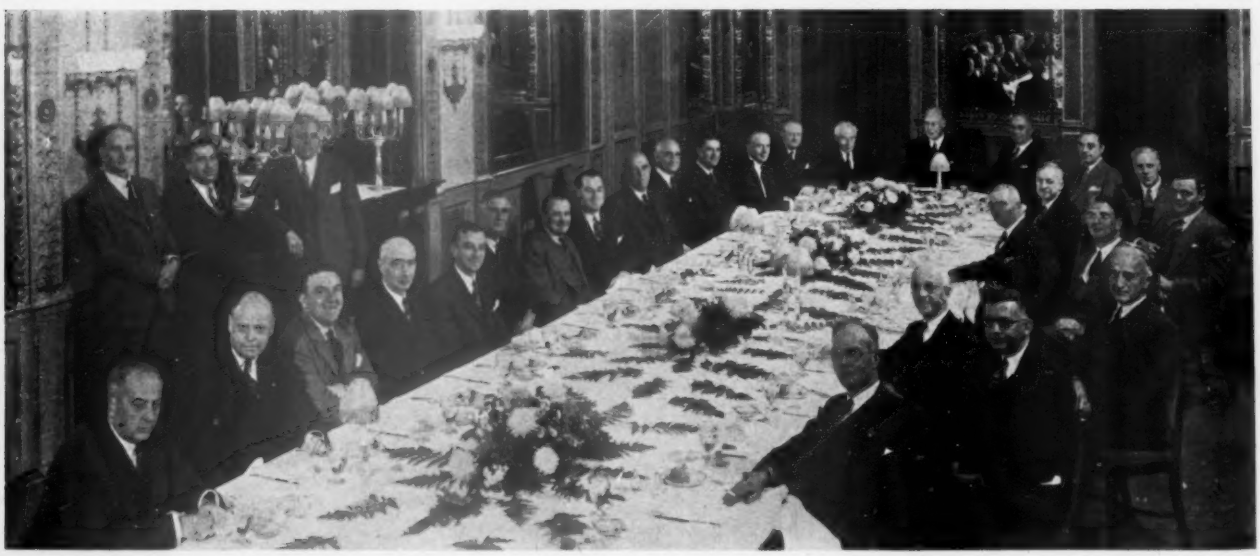
Taylor, Paul, Stone & Webster Service Corp., New York, N. Y.

Zachry, C. H., Southern Union Gas Co., Dallas, Texas.

Weyland, A. H., Arkansas Natural Gas Corporation, Shreveport, La.

(Continued on page 67)

A.G.A. MANUFACTURED GAS DEPARTMENT DINNER MEETING OCTOBER 24, WALDORF-ASTORIA, NEW YORK



Left to right—Seated (At Table) Errol W. Doebler, H. D. Lehman, R. E. Ginna, H. L. Nickerson, J. W. West, P. T. Dashiell, E. J. Tucker, E. H. Eacker, M. L. Sperry, P. S. Young, A. Macomber, R. G. Barnett, R. H. Hargrove, H. W. Reed, E. J. Boothby (Chairman), J. French Robinson, H. Carl Wolf, L. E. Knowlton, H. R. Cook, W. S. Byrne, R. Van Vliet. Second Row Right—Seated Rear to front: E. R. Acker, Edward Flack, R. C. Owers, Major Alexander Forward, Reporter. Standing—Left to right: A. Gordon King, Edwin L. Hall, George H. Smith.

"What woman *wills*... will be"

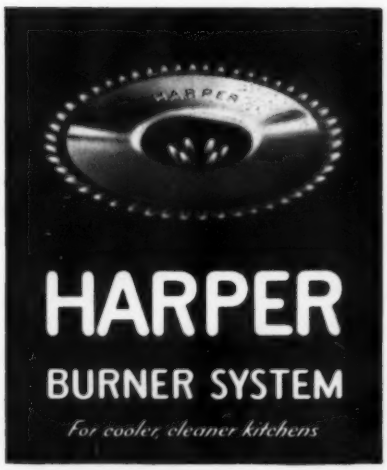
Today she wants her *cooking* made easier

ORDINARY top burners rank with the outdated automobile crank, once a housewife learns about the Harper Burner System. For easier cooking, it compares with outdated burners as the self-starter did with the crank. Here's why:

No other top burner has the easy, accurate *control*... the lower heat levels possible with Harper burners. Each burner is actually 2 burners in 1... a burner within a burner... both operated and controlled by a single handle. The small, inner *cooking* burner can be used entirely independently of the outer *starting* burner... an exclusive and vital advantage. It all adds up to *easier, time-saving cooking.*

Thousands of women have learned that the Harper Burner System insures cooler, cleaner, kitchens... a prime objective in the current AGA campaign to further promote gas as the ideal cooking fuel.

Copr. 1945, Harper-Wyman Co.



On next page
WHAT USERS SAY

"BETTER COOKING CONTROL"

says this user of the

HARPER BURNER SYSTEM

Although women agree that the Harper Burner System has *many* advantages over other types of top burners, they usually single out one particular advantage that appeals to them. Mrs. B. E. Dayton, 9122 W. 3rd St., Beverly Hills, California, says:

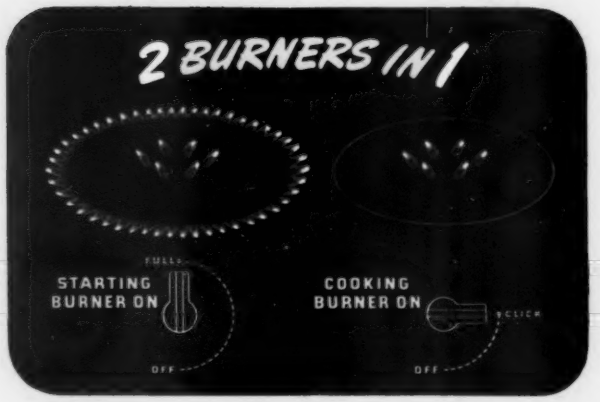
"With the Harper Burner System you have much better control over your cooking. You never have to 'watch the pot' because you can trust the small COOKING BURNER *not to boil away more than a cupful of water each hour."*

Finer adjustments of heat control is the answer

THE HARPER top burner consists of two sets of burner ports that function as distinctly separate units. When lower heats are desired, the large STARTING BURNER can be turned off, and the small COOKING BURNER, with its accurately-proportioned heat, takes over.

This plan increases the range of heat temperatures and *control* many fold. You can *depend* on it, for example, always to take more than one hour to boil away one cupful of water in a covered vessel. Pot watching is eliminated . . . "waterless cooking" that retains more of the important vitamins is possible . . . and "absent cooking" becomes a reality.

NOTE: A *new* and *improved* Harper Burner System is now available for range manufacturers who are producing deluxe ranges. Harper-Wyman Company, 8562 Vincennes Avenue, Chicago 20, Ill.



The Harper Burner System operates on the unique principle of "2 burners in 1" . . . a STARTING BURNER *plus a small, economical* COOKING BURNER, *both controlled by the same handle. It is subject to finer gradations of low heats—greater control and economy—than any other top burner made.*

HARPER BURNER SYSTEM

"HOLDS THE LINES FOR GAS"

HARPER BURNER

One of the standards of top burner performance under GP

Leadership and American Business

By
R. W. Gallagher
Chairman of the Board
Standard Oil Company (N. J.)
and a former President of
American Gas Association

OUR NATION has just ended a major war victoriously. A great challenge has been met. A task has been completed—the task of beating down a serious threat to our way of living. But all of us are aware, I am sure, that the job was not a final one. Conclusion of the war does not mean the end of problems. On the contrary, there are signs aplenty that the problems of peace are no less vast and no less urgent than those of war. Scores of questions, affecting the whole future of our country, must be answered. Many of them must be answered by American businessmen.

Challenges and problems are not strange to us. American business has successfully and constructively met them in the past. But in that past, problems were mainly those of production—of organizing the great resources of this country to meet people's material needs. Businessmen did a remarkable job in that field.

Today, of course, there are still problems of physical production. But by and large we can see ways to supply the goods that people need to live full and healthful lives. American business understands and practices the technique of large-scale production.

Now, however, we face problems that are more difficult than those of material output. They are more difficult because they are less tangible. These are the problems of distribution, of government, of security, of human relationships.

When the chief need of the American people was for material goods, certain individuals discovered means for meeting those needs, and they became the great businessmen of the country. Because they found ways to solve the problems of their day, they exercised leadership in their society. That leadership carried America far towards the goal of individual freedom and happiness.

If American businessmen are to continue to lead they must bring to the problems of today no less imagination, no less energy, no less ability than they have applied to the problems of production.

Presented at Annual Convention American Gas Association, New York, October 24th, 1945.

Essentials of leadership are awareness of the deep aspirations of people and ability to provide constructive suggestions as to how those aspirations may be realized. Leadership will not be granted to those who are content simply to point out the difficulties and flaws in the proposals of others. If today's managers of private enterprise are to justify their positions, they must conceive their duties in broader terms than simply the production of goods. They must have a sense of public responsibility; must see their function in society from a modern viewpoint, and must assume active roles.

It is not enough merely to "adapt ourselves" to changed conditions. We ourselves must help change conditions; we ourselves must find and show the way.

I do not want to convey any impression that I believe the responsibility is ours alone. What I *am* saying is that unless we bear our share of the load, the initiative will pass to others by default. Neither am I suggesting that today's complex economic problems do not at times require the help of government in their solution. But I am warning that when management, or labor, or local government, or any other group turn to Federal aid to solve problems they ought to be capable of solving themselves, they should realize that they generally will have to give something in return. If one asks, for example, that the police powers of the state be used for his benefit, he does not get the advantages of that power for nothing. He has to pay, and often pay double. He may, in fact, be endangering the very freedom which is one of the basic aspirations of all our people.

This is not because men in government are hostile to the liberties of the people. The question is simply how far in such cases the power of government will be used to regulate, and to what degree such regulation may become permanent. It seems certain to me that the regulatory powers of government will be exercised to the extent that the private leaders of our

R. W. Gallagher

country fail to accept and meet the responsibilities that society has entrusted to them. So-called "government interference" often is not really interference at all, but is induced by the inadequacy of those who normally are depended on to meet the need. If America has proper leadership, few situations will arise which will call for intervention by government in the private affairs of its citizens.

In the Declaration of Independence there is a phrase which states that governments derive "their just powers from the consent of the governed." Let me paraphrase that and say that, in a free society, leadership derives from the willingness of people to follow.

People will follow someone who tries to find answers to their deeply felt needs. They will desert leadership which ignores their needs or which is limited to criticizing proposed solutions without putting forward any alternatives.

As evidence of this we have only to consider the support that can be obtained for what are often called "crackpot ideas" when those ideas seem to offer solutions to problems which face large numbers of people. The Townsend Plan is a good example. It won thousands of followers because it offered a scheme, however impossible of practical operation, for meeting the desire of people

for economic security. It lost its force following the adoption of more practical measures which attained the same objective.

In this connection, I might observe that "crackpot ideas" are symptoms which may deserve more respectful consideration than we usually give them. Their very existence may call attention to a problem. The more such schemes there are, the more important the problem is likely to be. In the field of scientific invention, for example, the greatest number of novel ideas usually springs forth where there is most pressing demand for a new way to do things. Before Cyrus McCormick demonstrated his reaper in 1831 there were records of one German, two French, 22 American and 33 English attempts to make a reaping machine. Many of those devices were no doubt completely impractical—"crackpot ideas"—and when McCormick found the *right* answer to the problem of easing the toil of gathering grain, the earlier machines were discarded. But at least the inventors were trying—and they were making progress for all of us by that most basic device of the researcher—trial and error.

In general, the great mass of a people have a pretty accurate sense of the important needs of their time. What are some of the needs which most concern the American public today?

Obviously, they want a plentiful supply of low-cost products and services. But they want more than that.

They want protection against threats to their living standards through sickness, accident, unemployment and old age. They want the standards of their families protected against the death of the chief earner.

They want industry and labor to work together. They want small business and new business given every chance and encouragement.

They want leisure and the means to enjoy it healthfully. They want to raise their own living standards and to give their children opportunity for still higher ones. They want dignity, self-respect and jobs in which they get credit for what they do.

These things must be provided not just here and there but on a large scale. I think the solutions to these problems can come largely from American businessmen.

In the first place, businessmen already occupy positions of leadership—positions achieved through the ways in which they met the demands of society when our problems were principally those of production. In attaining those positions, businessmen have accumulated valuable experience. They are accustomed to solving problems. They are used to getting things done. What is more, they have the will to find answers.

Look around you today. Already we can see that those who are assuming leadership in business recognize the important problems of our time and are moving towards their solution. Let me quote from a recent article by Russell Porter of the New York Times, reporting his impression of American businessmen:

"A fundamental change has come over the American businessman since 1929. Elmer Gantry has gone and so has the stuffed shirt with a dollar sign on front. . . . The typical businessman and industrialist whom one meets when traveling around the country is a keen specialist in management, production, engineering or one or other technical professions. . . . He wants sustained high levels of production and employment at good productive wages, in an atmosphere of industrial peace at home and world peace abroad . . . he takes a great deal of pride in the fact that the American system outproduced all the totalitarian regimes in the world combined during the war and considers it a matter of prestige as well as survival to do the same in time of peace. He is very conscious of the cause and effect relationship between depression, war and revolution and he is out to prove that the United States, with its free enterprise system, regulated of course for the public good and in the national interest, but not controlled by Government bureaucrats and secret police, can and will avoid the debacle suffered in other countries where the inefficiency of diluted brands of democracy has paved the way to power for reactionary elements; right in some cases, left in others."

The experience of the American businessman is a very valuable social asset. It is this experience which enables him to see the dangers in those "crackpot ideas" I have mentioned. It is important that such dangers be pointed out. But we should not stop with criticism. Showing up fallacies is a very important job, but when business stops there, it risks appearing negative or obstructive. Let us never be so intent on pointing out the ten good reasons why something won't work that we give the impression we don't want it to work!

In criticizing, let us always remember that many innovations which at first appeared impractical later turned out to be of great benefit. Consider, for example, that in 1832 a Boston newspaper, discussing a proposal to shorten the customary working day from 14 to 10 hours, commented as follows:

"It strikes the very nerve of industry and good morals by dictating the hours of labor, abrogating the good old rules of our fathers and pointing out the most direct course to poverty; for to be idle several of the most useful hours of the morning and evening will surely lead to intemperance and ruin."

In addition to offering our sound appraisal of programs proposed by others, let us present our own plans for change of American life where there is greatest demand for progress.

If we are to exercise leadership, we cannot sit on the sidelines. We must examine trends and ideas many of which are related only indirectly to our immediate business concerns. We should furnish ourselves with facts, not prejudices—form accurate opinions, make plans and expound them.

When we say that we have experience, we are saying that we have experimented, that we have tested and tried. The words *"experience"* and *"experiment"* come from the same root, meaning "to test," "to try."

American business won its position of leadership by its willingness to push out into uncharted territory, to measure with skilled judgment the risks connected with such enterprise, and to move ahead with daring and vigor.

Now, as never before, there are new trails to be blazed through the social-economic territories of the modern world—pathways to new and better forms of human achievement.

Let us lead the way!

The Reliable Shut-Off for Street Mains

THE GOODMAN STOPPER

Now has the "Z" handle for easy manipulation. When locked in place it holds. Stopper cannot slip. Gas cannot pass. Adjusted in 30 seconds.

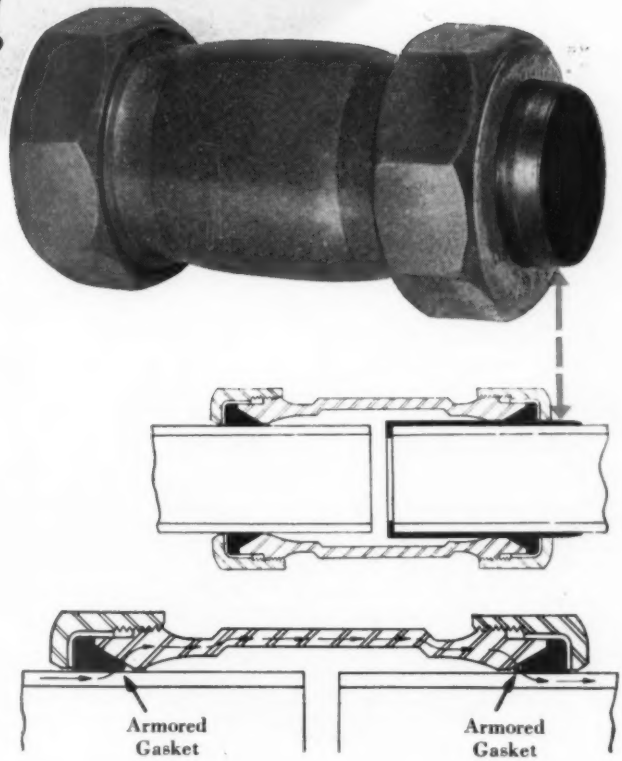
Ask for circulars on this and other distribution equipment.

Nearly a half century of service to the Gas Industry.

Safety Gas Main Stopper Co.
523 Atlantic Avenue, Brooklyn, New York

Protect your piping against CORROSION!

with Dresser Style 90 Fittings . . .



Dresser Style 90 SUPER-SERVICE FITTINGS

—available with insulating gaskets or Armored Gaskets.

Typical swing joint, using Dresser Style 90 Fittings with a Dresser Insulating Adapter Gasket for connecting copper service to main. Adapter Gasket provides for both electrolytic protection and reduction to copper tubing size.

Corrosion—wherever it strikes—is almost always of an electrochemical nature. In gas service lines, for example, leakage of electric current from homes may cause corrosion in mains. Protection is obtained (1) by insulating services at the main—or (2) by draining current from mains. Thus, according to piping design, either insulating or conducting fittings are required.

Dresser Insulating Couplings and Fittings (high resistance) and Dresser Couplings equipped with Armored Gaskets (low resistance) meet requirements of any electrolytic or cathodic protection system.

In addition, they are easy to install (no exact pipe cutting, threading or alignment are necessary), are tight, flexible . . . and last for life of the line.

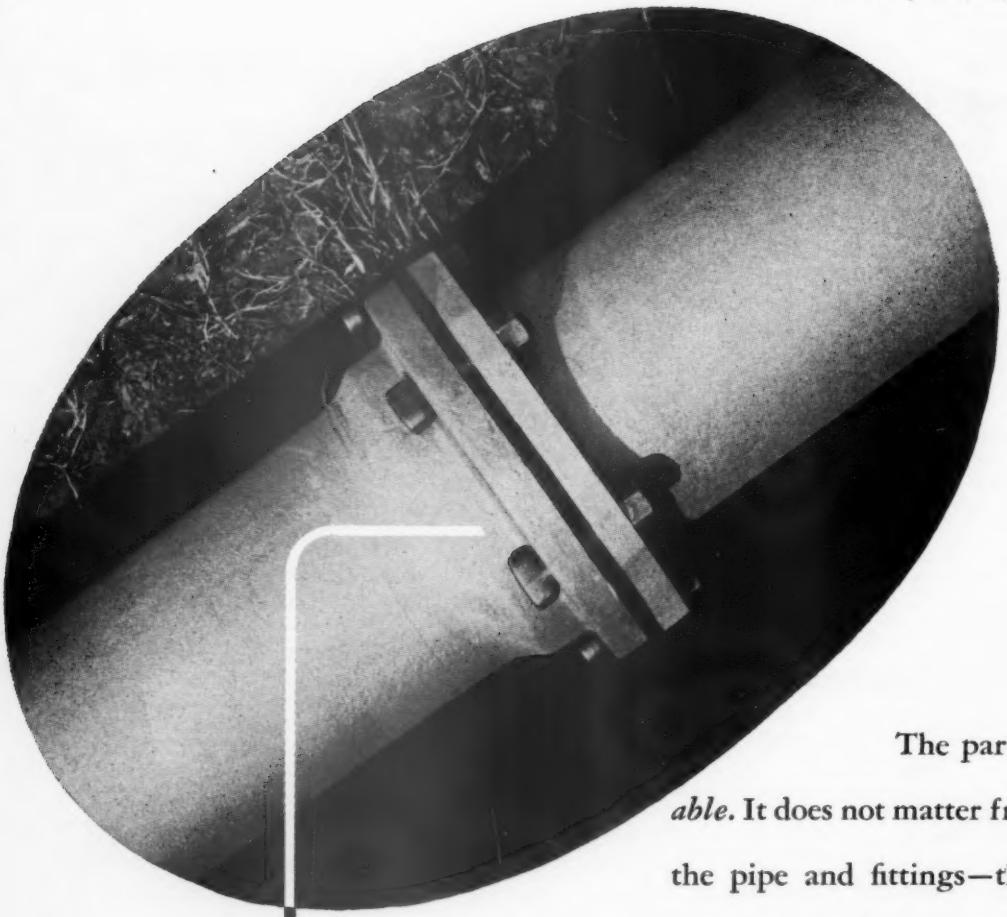
Dresser has a complete line of pipe couplings and fittings. Call or write for help on any pipe joining or corrosion problem.

* * *

DRESSER MANUFACTURING DIVISION
Bradford, Pa.
In Texas: 1121 Rothwell St., Sec. 16, Houston, Texas
In Canada: Dresser Manufacturing Co., Ltd., 60 Front Street, West, Toronto, Ontario.

DRESSER
ONE OF THE DRESSER INDUSTRIES

FITTINGS for Small Piping



NOW

The parts are *interchangeable.* It does not matter from whom you buy the pipe and fittings—the glands, gaskets and bolts will be *interchangeable.* No longer any need to stock different parts—no longer

1 Paint socket, spigot and gasket with soapy water.

2 Slip gasket into position, making sure it is evenly seated in the socket.

THIS BOTTLE-TIGHT JOINT IS *Standardized*

any risk of delay on the job through delivery of wrong parts. The mechanical joint is now *standardized.*

An eminent gas distribution engineer has said that there are three great chapters in the contribution of cast iron pipe founders to the gas industry. *First,* cast iron pipe itself, which made gas distribution in America possible; *second,* the development of the bottle-tight mechanical joint; *third,* the standardization of the mechanical joint.

All members of Cast Iron Pipe Research Association are now manufacturing the Standardized Mechanical Joint, with interchangeable parts, in sizes up to 12 inches. Larger sizes will be announced later. Cast Iron Pipe Research Assn., Thomas F. Wolfe, Research Engineer, Peoples Gas Bldg., Chicago 3, Illinois.

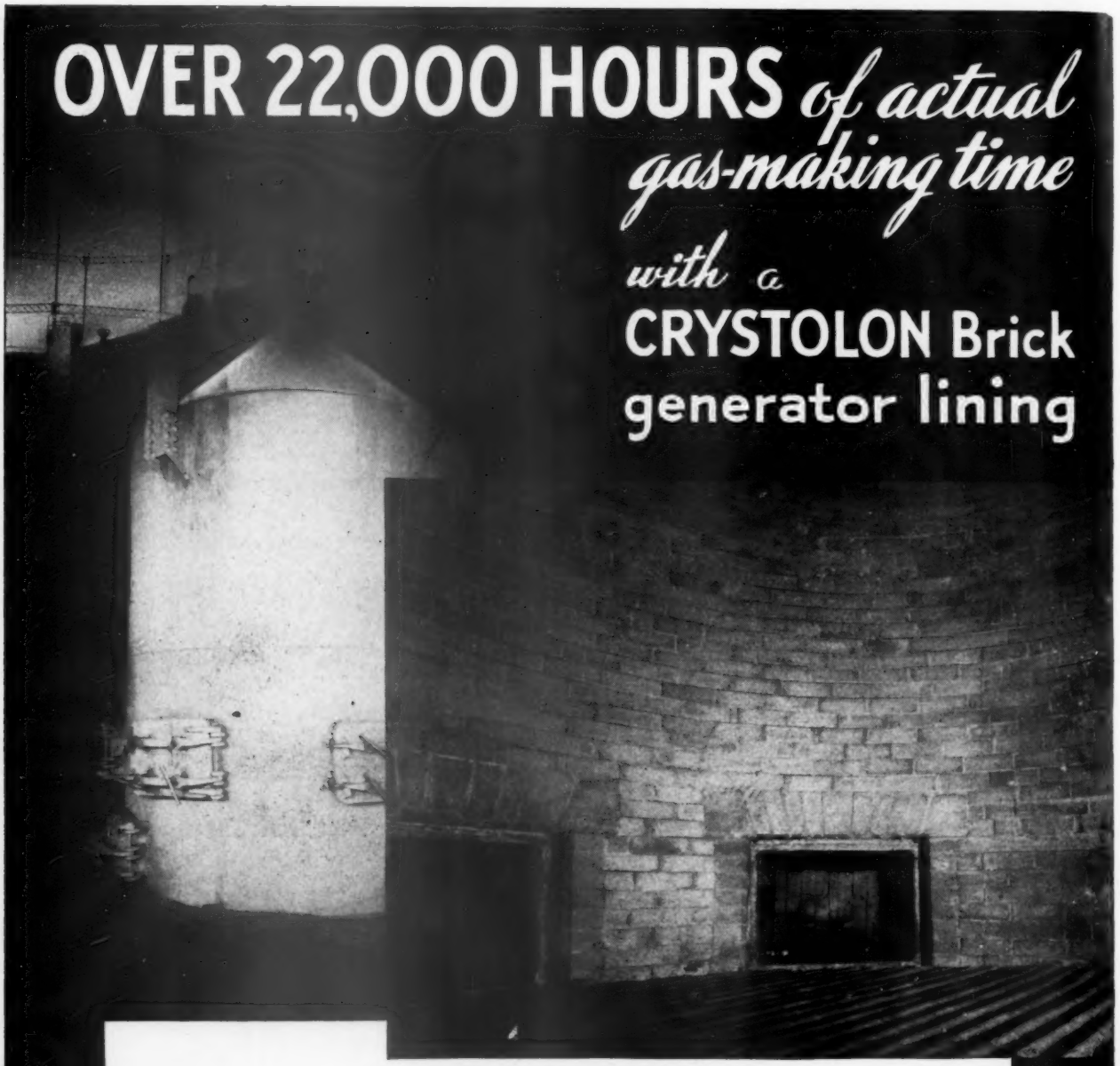
CAST IRON

Standardized **MECHANICAL JOINT**

PIPE

3 With gland in position, insert bolts and tighten partially with fingers.
4 Take ordinary ratchet wrench (only tool needed), tighten up bolts alternately (bottom bolt, then top bolt, and so on). That's all!

OVER 22,000 HOURS *of actual gas-making time with a* CRYSTOLON Brick generator lining



"The CRYSTOLON Brick in our generator are still in service after more than four years of operation which included 22,362 hours of actual gas-making time, and we expect to operate this set through the coming winter."

That is what a production superintendent wrote us. CRYSTOLON (silicon carbide) Brick are highly refractory, chemically stable and physically rugged. They resist slag penetration, thus reducing clinker removal time sufficiently for a lining often to pay for itself the first year.

NORTON COMPANY — Worcester 6, Mass.

Norton Longer Lasting Refractories

Developments in Carburetted Water Gas

By

C. A. Schlegel

Sales Manager
United Engineers & Constructors Inc.
Philadelphia, Pa.

THE MANUFACTURED Gas industry is giving most active consideration to the problem of satisfying the peak load requirements which are characteristic of the house-heating load. These peaks, of short duration, must be taken care of with plant and processes of minimum investment costs in order to successfully meet the competition of other fuels.

The three-year research program of the American Gas Association, under the able direction of Mr. P. T. Dashiell, is being directed to the development of low investment cost peak load plant and to the reduction in the production cost of gas. Such a program involves an appraisement of present apparatus and processes and the developments in them. It is the purpose of this paper to discuss some recent developments of our Company along these lines and comment on equipment and processes that are presently available.

Naturally, the first step in securing additional capacity at minimum investment costs is to realize the increases in existing production and gas handling equipment that are available. Such increases are likely to be secured at quite low investment costs and surely less than new plant additions. One plant, for example, increased the capacity of an 11'-0" set from about four million to over five million cubic feet per day through the use of a larger capacity blower and a shorter cycle. The necessities of war have stimulated the efforts of most operators in this direction. It is believed, however, that many plants still have possibilities for such increases.

Further additions to capacity can be considered through the use of such equipment of the latest and most efficient design as can be justified on the basis of the savings in production cost and savings in and betterment of labor conditions which their use, as base load equipment, will provide. This releases the older, less efficient equipment for use as peak load capacity. In this manner, the equipment producing the base load, and which largely determines the production costs, is maintained at high level of efficiency and full advantage is taken of the improvements in the art.

There is then the further consideration of equipment of low investment and high operating cost for peak purposes only. The use of L.P. gases is receiving consideration in meeting this need. Several plants are being installed and the experience gained with them will be very useful and interesting.

It is hoped that the following general discussion of equipment and processes that are now available will be helpful in consideration of this problem of meeting the characteristics of the gas load with increasing amounts of house heating.

Tests recently conducted, at Philadelphia, upon mechanical generator carburetted water gas sets demonstrated that another large step forward has been taken in the securing of higher capacity from water gas sets. The results of these tests, appearing later in this paper, have a bearing on this matter.

Hand-Clinkered Water Gas Sets

Further progress has been made in recent years in increasing the capacities of hand-clinkered water gas sets through the use of higher blast rates and shorter operating cycles. These higher capacities develop bottle-necks within the set, many of which can be eliminated at a reasonable cost.

An example of this can be given from the experience of a plant securing increased capacity from older design 11'0" water gas sets. The set capacity was stepped up from 3,500 Mcf to about 5,000 Mcf per day by increasing air and steam rates, using a maximum of reforming and blow run, and decreasing the length of cycle. Many examples of similar cases could be cited.

The rated capacities of new sets have been stepped up with the design of the set modified accordingly.

C. A. Schlegel

Mechanical Generators

The most important improvement in gas production apparatus during the last twenty years is, undoubtedly, the mechanical or self-clinkering water gas generator. This, with the automatic fuel charger and automatic control machine, provides a fully automatically operated water gas set of high capacity and efficiency requiring a minimum of labor.

This apparatus applies the principle of a rotating grate to continuously remove the clinker and ash from the fuel bed and deposit them in hoppers to be removed as desired. A water-jacketed section of the generator, operated as a low pressure boiler, prevents the adhesion of clinker to the side walls of the generator.

The principal benefit of the mechanical generator is that it avoids the hot and dirty job of hand-clinkering, saves labor cost by eliminating the clinkering gang, and greatly improves the working conditions of the generator house. The second advantage is the increase in blue gas capacity of the generator resulting from the greater number of hours of gas-making time, more uniform fire conditions, and ability to use higher blast rates than with hand-clinkered generators. A further advantage is the ability of the mechanical generator to handle lower class fuels.

The low pressure steam produced in the jacket boiler, approximately

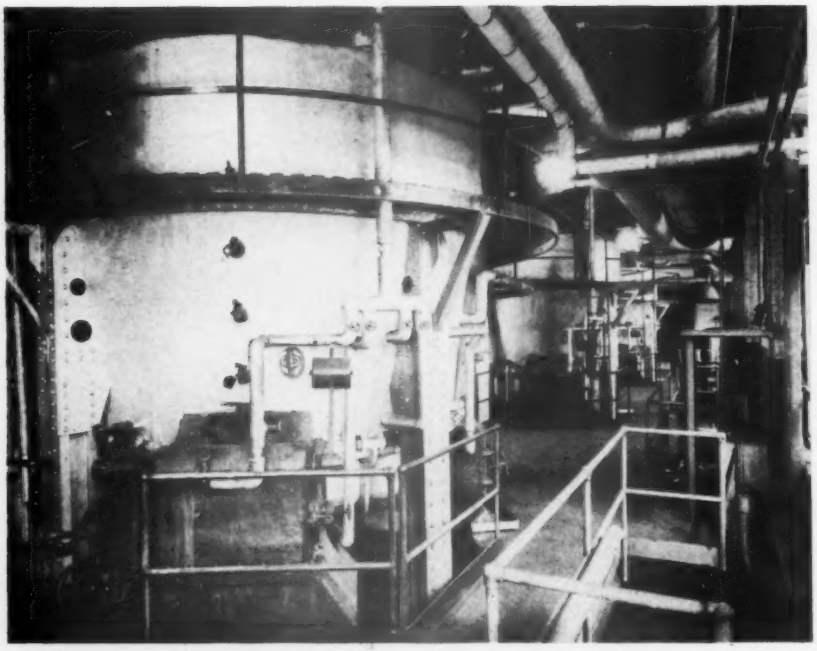


Figure 1: 9'-0" I.D., U.G.I. Model "B" Mechanical Generators installed in 1929 on existing carburetted water gas sets in the station "B" Plant of The Philadelphia Gas Works Company, Philadelphia, Pa.

one-third of the amount required for water gas reaction, is recovered from heat otherwise wasted.

The mechanical generator makes possible the building of water gas sets of capacities higher than that of the twelve foot, hand-clinkered sets since a generator of this size is about the largest that can be hand-clinkered. This means that sets producing up to 10,000 Mcf and more per day can be built with material savings in investment per M of set capacity, and much larger investment savings per Mcf in the items of blowers, piping, fuel handling, building and foundations. Mechanical generator carburetted water gas sets are available in rated capacities from 6,000 Mcf to over 10,000 Mcf per day.

An interesting example of the development in carburetted water gas apparatus over the last twenty years is shown in a rather large plant. Several 11' sets were originally installed for the use of coke and gas oil. The capacity of these sets, for most economical operation with fuels available, was about 4,000 Mcf per day. The sets had hand-clinkered generators.

The development of the use of heavy oil made it possible to economically operate these same sets, with minor changes, at a daily capacity of about 6,000 Mcf. A recent installation of the latest design mechanical generator set is yielding over 9,000 Mcf per day (estimated) with the use of heavy oil and coke and affording the other advantages of mechanical generator operation. This new installation was made as an extension of the present generator house and required only a small increase in ground area over that required for a single hand-clinkered set.

The mechanical grates and jacket boilers are also used in replacing hand-clinkered generator grates on existing eleven and twelve foot sets. Many such installations have been made on semi-water gas sets in chemical plants and a few in carburetted water gas plants. Increased interest is expected for the latter. Mechanical generators for smaller sized sets will also be in demand. Designs for them are developed.

High Set Capacity Tests at Philadelphia

Late in 1944, there were installed in the Station "B" Plant of The Philadelphia Gas Works Company, two 10'-0" x 9'-0" I.D. U.G.I. mechanical generator carburetted water gas sets, each having a 12'-0" O.D. carburetter and a 12'-0" O.D. superheater lined to 10'-0" I.D. The generator is flared, being 9'-0" at the grate. The sets are equipped with automatic control machines, waste heat boilers, exhaust steam manifolds, Back Run Process and for operation with the U.G.I. Heavy Oil Process.

In the same generator house, there are also three sets converted from hand-clinkered to mechanical generator in 1929. Each of these sets has a 9'-0" x 9'-0" I.D. mechanical generator and 12'-0" carburetter and superheater lined to 9'-0" I.D., similarly equipped with automatic control, etc. At that time, the capacity of each of these sets was rated at a little over 6,000 Mcf per day. These sets, as well as those installed in 1944, are charged by means of a fuel larry. The charging time is about one minute.

The demand upon this plant in the summer is naturally considerably reduced, so Mr. Dashiell, Vice President, of the Gas Works Company, decided that this condition provided an excellent opportunity to run capacity tests on the two types of mechanically clinkered sets at the plant so that actual results could be obtained on the two new sets with no other sets operating in the plant, and separate, similar tests on two of the older mechanical generator sets.

A continuous fourteen day test on the two 10'-0" x 9'-0" I.D. mechanical generator sets gave an average make per set day of 10,119 Mcf, corrected gas of 529 Btu per cu.ft. The fuel used was a screened by-product oven coke containing 8%+ ash and having an ash fusion temperature of 2550°F. A 50-50 mixture of 2" x 1¾" and plus 2" sizes of coke were used. Heavy fuel oil averaging 16 sec. viscosity, Saybolt Furol, 122°F., 1.5% Conradson Carbon and .14% ash, and with an enriching value of slightly over 100,000 Btu per gallon was used. The generator blast rate was carried at 20,000 c.f.m. and the set operated on a 4.17 minute cycle.

A continuous four-day test on the two 9'-0" x 9'-0" I.D. mechanical generator sets gave an average make per set day of 9,313 Mcf, corrected gas, of 531 Btu per cu. ft. The fuel used was the larger size, plus 2". Heavy fuel oil averaging 60 sec. viscosity, 5.07 Conradson Carbon and .26% ash, and with an enriching value of slightly over 100,000 Btu per gallon was used. The generator blast rate was carried at 20,000 c.f.m. and the set operated on a 4.00 minute cycle.

A further test on the 9'-0" x 9'-0" generator sets over a continuous fifteen-day period showed an average make of 8,560 Mcf. Heavy fuel oil averaging 352 sec. viscosity, 6.9 Conradson Carbon and .77% ash was used.

Summaries of the above tests are given in Tables I and II.

TABLE I

I—SUMMARY OF HIGH CAPACITY TEST

on 2—10′-0″ x 9′-0 I.D. U.G.I. Mechanical Generator C.W.G. Sets at Station "B" Works, Philadelphia Gas Works Co., Philadelphia, Pa.

Equipment

Two 10′-0″ x 9′-0″ I.D. U.G.I. mechanical generator carburetted water gas sets, each set having a 12′-0″ O.D. carburetter and a 12′-0″ O.D. superheater, each lined to 10′-0″ I.D. The sets are equipped with automatic control machines, waste heat boilers, exhaust steam manifolds, Back Run Process and for operation with the U.G.I. Heavy Oil Process. These two sets were installed and placed into operation late in 1944.

Conditions of Test

The two sets were the only sets in operation in the plant for a continuous period of fourteen days.

Coke Used

The fuel supplied to these sets was screened by-product oven coke containing about 8%+ ash. The fusion temperature of the ash was 2550°F. The coke was a 50-50 mixture of 2″ x 1¼″ and plus 2″.

Enricher Used

The heavy oil had an enriching value of slightly over 100,000 Btu per gallon as determined on a laboratory set. Fifty per cent of the oil was admitted to the top of the generator fire and fifty per cent to the carburetter. Twenty per cent of the total oil used was reformed down through the fire.

Operating Results

Date of Test	July, 1945
Duration of Test—Days	14
Kind of Oil	Bunker "C" Fuel Oil
Kind of Fuel	Oven Coke
Size of Fuel	Mixed Size
Generator Blast Rate—cu. ft./min.	20,000
Make per set day—Mcf	10,119
Make per running hour—Mcf	450
Fuel per Mcf	14.39
Oil per Mcf	4.44
Btu	529
Specific Gravity	.701
Terzian Factor	1.11
Viscosity of Oil—Seconds Saybolt Furol, 122° F.	16″
Conradson Carbon in Oil—%	1.5
Ash in Oil—%	.14

TABLE II

II—SUMMARY OF HIGH CAPACITY TEST

on 2—9′-0″ I.D. U.G.I. Mechanical Generator C.W.G. Sets at Station "B" Works, Philadelphia Gas Works Co., Philadelphia, Pa.

Equipment

Two 9′-0″ I.D. U.G.I. mechanical generator carburetted water gas sets, each set having a 12′-0″ D.D. carburetter and a 12′-0″ O.D. superheater, each lined to 9′-0″ I.D. The sets are equipped with automatic control machines, waste heat boilers, exhaust steam manifolds, Back Run Process and for operation with the U.G.I. Heavy Oil Process. These sets were converted from hand-clinkered to mechanical generator operation in 1929.

Conditions of Test

The two sets were the only sets in operation in the plant during the periods of these tests.

Coke Used

The fuel supplied to these sets was screened by-product oven coke containing about 8%+ ash. The fusion temperature of the ash was 2550°F. The coke used was plus 2″ in size.

Enricher Used

The heavy oil used had an enriching value of slightly over 100,000 Btu per gallon. Forty per cent of the oil was admitted to the top of the generator fire and sixty per cent to the carburetter. Twenty per cent of the total oil used was reformed down through the fire.

Operating Results

Date of Test	August, 1945	July & Aug., 1945
Duration of Test—Days	4	15
Kind of Oil	Bunker "C" Fuel Oil High	Coke Residium Oil
Kind of Fuel	Oven Coke	Oven Coke
Size of Fuel	Large Size	Large Size
Generator Blast Rate—cu. ft./min.	20,000	20,000
Make per set day—Mcf	9,313	8,560
Make per running hour—Mcf	433	412
Fuel per Mcf	14.28	15.42
Oil per Mcf	4.27	4.22
Btu	531	531
Specific Gravity	.701	.720
Terzian Factor	1.073	1.085
Viscosity of Oil—Seconds Saybolt Furol, 122°F.	60″	352″
Conradson Carbon in Oil—%	5.07	6.90
Ash in Oil—%	0.26	0.77

Automatic Charger Machines

A further step in the automatic operation of a water gas set is accomplished by the use of an automatic fuel charger. This device is nearly always installed with mechanical generator blue gas sets for chemical companies, but only rarely for carburetted water gas plants.

The automatic charger is a gas-tight, intermittent fuel feeder which adds the proper amount of coke to the fuel bed during each cycle. It increases the capacity of the set by increasing the operating time as follows: saves the time otherwise lost in manual fuel charging; reduces or eliminates the longer blow after fueling, and avoids any reduction in the amount of oil used on the run following coaling. A more uniform temperature condition from cycle to cycle is maintained in the carburetter and superheater.

We usually estimate an increase of 7% to 10% in daily capacity with automatic charging, and in some plants, it may be considerably more than this.

In the larger sets which are coming into use at the present time, the automatic charger is likely to be almost a necessity, as, under manual charging, the amount of cold coke added to the top of the fire every twenty minutes to half an hour is so great that the tendency is to seriously disturb the balance of the set.

The operation of the water gas set may require observation of the fire and access to the upper part of the generator for cleaning. An observation door or manhole is provided for the former and removal of the charger for the latter. Chargers are designed so that they can be readily moved from the charging opening and replaced.

Heavy Oil Process

From the financial standpoint, undoubtedly the outstanding improvement in carburetted water gas, during the last twenty years, has been the Heavy Oil Process. This Process enables the Gas Company to use, instead of gas oil as a carburetting medium, the lower priced fuel oils whose prices are related to that of coal and therefore more stable. The Process was put into general commercial operation in the late 20's when gas oil prices were high. At that time, in some cases, savings in production cost amounted to from 5c to 10c per M, with low investment cost, which "saved" many carburetted water gas plants.

The lower priced fuel oils, commonly called "Heavy Oils" include Bunker "C" oils, other residuum oils from refinery operations, low grade crudes with high carbon content, etc. The full savings of the Process are obtained by determining the refinery product which it is most beneficial to use, and further, to use such refinery residues that refineries can dispose of only at a price concession.

This Process is generally used on the Eastern Seaboard. Such companies as do not use heavy oils should again give it consideration, both as to the economics of its use and also as to the supply of a good grade of gas oil. Uncracked gas oils are almost unobtainable in large quantities.

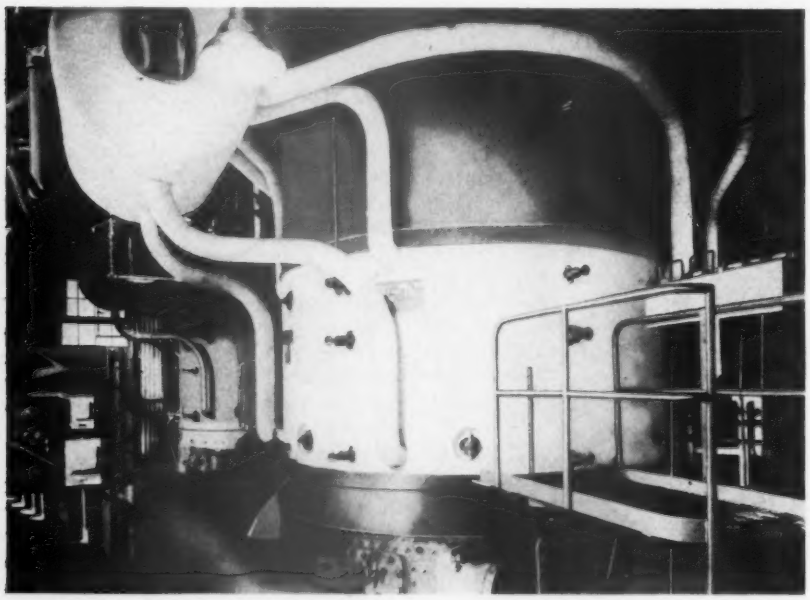


Figure 2: 10'-0" x 9'-0" I.D., U.G.I. Model "D" Mechanical Generator Carburetted Water Gas Sets installed in 1944 in the Station "B" Plant of The Philadelphia Gas Works Company.

O'Keeffe Carbon Burning Lining

Heavy Oils used in the carburetted water gas process deposit various amounts of carbon in the carburetter of a water gas set, depending upon their composition. A certain quantity of such carbon is consumed in the process. The use of heavy oils depositing greater quantities of carbon requires the removal of the excess carbon from the carburetter. This is usually done manually and reduces the operating time of the set. With hand-clinkered sets, this carburetter cleaning may be done during the clinkering period, but with a mechanical generator, it is a definite loss.

The O'Keeffe Carbon Burning Lining, developed by the late J. G. O'Keeffe of Public Service Electric and Gas Company, provides a perforated inner carburetter lining connected by air flues in the lining to the air blower system. The addition of air during the blow consumes the carbon around the perforations and renders the balance of the carbon easy of removal. In one large plant, the carbon cleaning time has been reduced to about a third that required before its installation.

Oil Gas Reforming Process

The Refinery Oil Gas Reforming Process was put into commercial operation in the early thirties. In a blue water gas set, or a carburetted water gas set, raw refinery oil gas is reformed and then enriched to produce enriched reformed city gas. The Process is notable for its extreme flexibility in its ability to vary the specific gravity and composition of the finished gas to suit local distribution conditions, for the high capacity secured from the sets, for the small amount of labor required and for the low production cost per M of finished gas. It makes a most desirable operating proposition.

Obviously, two basic conditions must be met to make this Process possible of use. First, the water gas plant should be located within a reasonable distance of the oil refinery, and, second, the oil refinery gas should be purchased at a price that will produce low cost finished gas. The number of locations where this Process is applicable is limited.

Naturally this Process is quite adaptable to the use of liquefied petroleum products in either the liquid or gaseous form. High capacities are obtainable, which are so desirable for peak load requirements. Most of the advantages of this Process when used with refinery oil gas are applicable when using other hydrocarbon gases.

It should be borne in mind that, with modern operating methods and equipment, high capacities of the same general magnitude as secured with the use of butane, propane or refinery gas can be produced with reforming of gas oil or a fair grade of heavy oil.

Tar Dehydration Systems

The use of asphaltum base oils—which class comprises most of the present day fuel oils—in the manufacture of gas gives a tar which contains a high percentage of water, usually difficult to remove. Several systems have been developed for the dehydration of tar involving the application of heat to remove the water by decantation and boiling, using a batch method of treatment.

The Scroll Tar Separating System is a somewhat recent development which removes some of the water mechanically. In this system, the wash box effluent and other condensates are collected in a well or baffle separator. From this point, the tar and water pass through a mechanical screen to remove the breeze and other particles, then through a centrifugal pump, and finally through a scroll which prepares the tar and water for quick separation.

The separated water and light oils are taken off and the tar, with remaining water, is then treated in a Continuous Tar Dehydrator for the removal of the remaining water.

The Continuous Tar Dehydrator is a further development which dehydrates tar by the application of heat, in the form of steam, to tar emulsion in a specially designed heat interchanger.

By thus making the first separation of water mechanically and greatly reducing the length of time that the tar emulsion is subjected to heating, polymerization of the tar and light oils is avoided. These systems appear to use less steam, recover a higher percentage of light oils and produce a more fluid tar than the conventional "batch" steam stills.

One plant was able to justify the installation of the continuous tar dehydrator to replace an older system

on the basis of increased savings in light oil recovery and benefit of the lower viscosity of the tar.

Other Plant Improvements

There are, of course, the older developments, such as automatic controls, Back Run Process, waste heat boilers, that are well known and should be in any plant striving for efficiency and capacity.

Adequate condensing is an indispensable part of proper gas conditioning and has its part in increasing capacity by the reduction of gas temperatures throughout the plant and proper removal of condensibles.

Great progress has been made in the design of gas condensers. The application of fundamental heat transfer theory and engineering experience to the design has resulted in apparatus with greatly increased rates of heat transfer. This is reflected in the investment cost of condenser capacity and in saving in ground space.

Some idea of the development in gas condensers can be gained by the following comparison: An eight foot diameter, old style, single pass condenser was good for cooling about 400 Mcf per day, while an eight foot diameter, modern, multipass Haug condenser is good for cooling about 12,000 Mcf per day.

Much can be said of other elements of the gas plant bearing on increased capacity and low investment cost, among which are increased size of plant gas mains, increased water supply to condensers, adequate tar removal apparatus, maximum service from purification plant, improvements to steam boiler plants, simpler construction and minimum housing for the apparatus.

Investment Cost per Mcf

The natural question is, "How have all of these improvements affected the investment cost of carburetted water gas plants?" Obviously it is both difficult and dangerous to give average figures for construction costs because each plant presents its own problem. In recent years, figures have been quoted for the investment cost per Mcf per day which are so far out of line with our experience in plant development that we feel we should give some costs on completed projects, relying on your judgment as practical engineers to use them with discretion.

We are giving two examples covering the actual investment cost per Mcf of two situations, one increasing capacity by adding to existing plant, and the other, by building a new plant on a clear site.

One large company in the East, for which we occasionally build water gas equipment, has, in the last few years, increased its capacity twenty million cu. ft. per day. This includes water gas sets, blower piping, generator house, steam boiler, condenser, exhauster, purifiers, station meter, relief holder and portion of cost of tar separator, tanks and fuel handling allocated to this capacity. This company has told us that this twenty million cu. ft. additional capacity stands them, on the books, at slightly less than $50.00 per Mcf of daily capacity.

Let me emphasize that this new plant will produce twenty million of 530 Btu gas every day in the year (except for maintenance shut-downs) at the lowest production cost consistent with the prices of raw materials and labor which the gas company must pay. The new equipment becomes base load plant, and, automatically, the older and less efficient equipment becomes peak capacity. In other words, the gas company is not only providing for its peaks at a low cost, but also should reduce its production cost by substituting modern for older apparatus.

We can also cite the illustration of a new water gas plant which was installed about 1941. This plant was built on a clear site adjacent to an existing coal gas plant and included two nine foot mechanical generator water gas sets, extension of existing fuel handling equipment, condenser, one exhauster, tar removal equipment, purifier equipment, station meter, relief holder, oil and tar tanks, one steam boiler, buildings and heavily piled foundations and all gas piping to an existing storage holder. The gas handling equipment has a designed capacity to handle the gas produced on the two water gas sets.

The investment cost in 1941 of this water gas plant was approximately $64.00 per Mcf of daily capacity. The addition of the estimated cost at that time of a spare exhauster and steam boiler brings this figure to $68.00 per Mcf of daily capacity. The increase in costs of materials and labor since 1941 must, of course, be added to give present day values.

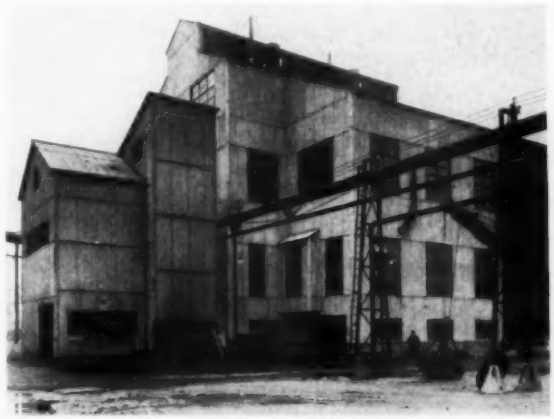
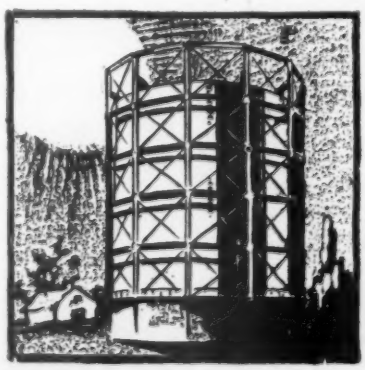


Figure 3: Generator House addition for new Mechanical Generator C.W.G. Sets, Station "B" Plant. It shows simple building construction of corrugated asbestos siding on structural steel framing instead of the massive brickwork of old generator house.



Conclusion

There is every reason to believe that the development in carburetted water gas apparatus and processes in the future will be even greater than has been accomplished in the past. We will get new apparatus and processes, but not immediately, as there is an appreciable period of time between the new idea and the commercial realization.

It is suggested that those companies which have not done so have their plants surveyed by competent designing and operating engineers to determine the needs of their plant so as to realize the full benefits of presently available apparatus and processes in meeting their production demands.

Presented at the Operating Division, New England Gas Association, Boston, Mass., October 17, 1945.

The Gild Presents an "Oscar" to Major Forward at Testimonial Dinner

Presentation of the Gild's "Oscar": Left to right; Messrs. Wolf, Guitteau, Forward, Bartlett, Robinson and Mulcare.

Presentation of an "Oscar" to Major Alexander Forward, retired Managing Director of the American Gas Association, highlighted a dinner given in his honor by the Gild of Ancient Supplers, at the Engineers Club, New York City, Oct. 10. The Bronze table ornament has a sculptured design representing the "Gas House Terrier" with suitable inscription. This was the third such award in the Gild's eight years of existence.

An honorary member of the Gild, Major Forward was greeted by 35 Supplers and specially invited Burghers. In his response, he reviewed briefly the progress of the gas industry during his 22 years at A.G.A. and said:

"I have turned over my keys and my bottle of aspirin to Carl Wolf, the best man in this industry for the job ahead. He deserves, and will undoubtedly receive, the same high degree of cooperation and support which this industry gave me. I take with me into retirement the most pleasant recollections of the Gild and its affairs."

Mayor C. E. Bartlett, of Bartlett & Co., Philadelphia, Pa., presided and presented the "Oscar." He told Major Forward that "This is a commencement, not the end, in the same manner that we graduate from one school to another."

J. French Robinson, president of A.G.A. and president of the East Ohio Gas Co., Cleveland, Ohio, paid tribute to Major Forward's part in building the association "from grass roots to a position second to none in American industry."

Former Mayor William S. Guitteau, American Meter Co., Fort Lauderdale, Fla., informed the Burghers that "To be eligible for membership, Supplers must have spent at least 10 years trying to sell equipment, appliances and services to gas company men like yourselves."

Senior Warden Joe A. Mulcare, Mulcare Engineering Co., New York City, told Major Forward that "you can never retire from the Gild."

Among those present: Left to right; Messrs. Whitelaw, VanNorden, Sellman, Gonnoud, Cuthrell and Harper.

Burghers present, in addition to those already mentioned, were: Hugh H. Cuthrell, vice-president Brooklyn (N. Y.) Union Gas Co.; A. J. Gonnoud, president, Kings County Lighting Co., Brooklyn, N. Y.; N. T. Sellman, vice-president, Westchester Lighting Co., Mount Vernon, N. Y.; and H. Carl Wolf, new Managing Director, A.G.A.

Supplers present, in addition to the officers who spoke, were: Harold O. Andrew, *Gas Age;* George E. Boyd, Wailes Dove-Hermiston Corp., New York; James K. Crowell, Dresser Mfg. Co.; New York; John L. Eigenbrot, General Coal Co., Philadelphia, Pa.; James E. B. Gibbons, Wailes Dove-Hermiston Corp., New York; Thomas M. Gilbert, Cutler-Hammer, Inc., New York; James I. Gorton, Association of Gas Appliance and Equipment Manufacturers; Fred W. Gottschling and Jay M. Grady, Superior Meter Co., Brooklyn, N. Y.; Harry A. Grassman, Inner-Tite Div., Yara Engineering Corp., Elizabeth, N. J.

William G. Hamilton, Jr., American Meter Co., Philadelphia, Pa.; M. J. Harper, Pittsburgh Equitable Meter Co., New York; L. M. Humrichouse, Elk River Coal & Lumber Co., Philadelphia, Pa.; Wilson J. Kite, Jr., Barrett Division, Allied Chemical and Dye Corp., New York; Bernard D. Klein, Gas Purifying Materials Co., Long Island City, N. Y.; John B. Klumpp, consulting engineer, Philadelphia, Pa.; S. G. Krake, *American Gas Journal,* New York; Joseph A. Messenger, Buell Engineering Co., New York; J. H. Moore, *Gas Age;* Glenn H. Niles, consulting engineer, Ridgewood, N. J.; William H. Parish, General Coal Co., New York; H. W. Springborn, *Gas Age;* John VanNorden, American Meter Co., New York; and H. Leigh Whitelaw, A.G.A.E.M.

RAISING THE ROOF WITHOUT GETTING IN A JAM

Remember how tough it was to make a collapsible drinking cup telescope shut if one section got out of round?

What a job you'd have with a telescoping structure 640 feet in circumference! The five million cubic foot, all-welded, wet-seal gas holder, for instance, now being engineered in California by Stacey Bros. Gas Construction Co., one of the Dresser Industries. It's the largest of this type ever designed for all-welded construction.

The sections are being built, one inside the other, like a huge drinking cup upside-down. Each section must slide up and down with the gas volume. But the sections, coupled by a water-filled device can have only four inches clearance on a diameter of over two hundred feet! That's actually fine precision, if you take a giant's eye view.

The sections are made of steel plates. Unavoidably, welding causes the steel to buckle yet the plates have to be welded on both sides. If the buckle becomes bad enough it can jam two sections when the roof of the holder is raised.

Engineers of Stacey Bros. said why not weld only one side of each section on the ground; then devise a means of getting the whole holder up in the air in finished position with the first buckles ironed out and the true roundness held before completing the job of welding.

This, Stacey Bros. engineers accomplished and the method of erecting holders is so unique it's now patented, one of many strokes of creative engineering that have given Stacey Bros. an overwhelming majority of contracts. Whenever you think of any member of Dresser Industries, Inc., think of *Creative Engineering.*

THE PLUS OF DRESSER INDUSTRIES

Back of every product of every member of the group of companies stands Dresser Industries, Inc.—strengthening the resources; co-ordinating and stimulating engineering, production and distribution for its member companies. This is the Plus of Dresser Industries. To customers of every Dresser member this Plus is passed on through the products they buy—a Plus Value.

Dresser Industries, Inc., Terminal Tower
Cleveland 13, Ohio

BOVAIRD & SEYFANG Manufacturing Co.
Bradford, Pa.

BRYANT Heater Company, Cleveland, Ohio

CLARK Bros. Co., Inc., Olean, New York

DAY & NIGHT Mfg. Co., Monrovia, Calif.

DRESSER Manufacturing Div., Bradford, Pa.

DRESSER Manufacturing Company, Limited
Toronto, Ont., Canada

INTERNATIONAL Derrick & Equipment Co.,
Columbus, Marietta & Delaware, Ohio;
Beaumont, Texas, Torrance, Calif.

KOBE, Inc., Huntington Park, California

PACIFIC Pumps, Inc., Huntington Park, Calif.

PAYNE Furnace Co., Beverly Hills, Calif.

ROOTS-CONNERSVILLE Blower Corporation,
Connersville, Ind.

SECURITY Engineering Co., Inc., Whittier, Calif.

STACEY BROS. Gas Construction Company,
Cincinnati, Ohio

VAN DER HORST Corporation of America,
Olean, N. Y. and Cleveland, Ohio

IMMERSION HEATING OFFERS 7 "PLUS VALUES!"

When you install this Sellers Gas Fired Immersion Steam Boiler the gas is burned inside a series of totally submerged horizontal tubes, each tube being a separate combustion chamber with its own individual burner — you get *seven* distinct advantages over the underfiring system:

- **There's No Destructive and Fuel-Wasting Scaling.** Expansion of the totally submerged firing tubes is sufficient to loosen any scale — it drops to settling space and is easily blown out.
- **Efficiency Is Sustained at High Level.** Because the tubes remain clean and free from excessive scale, the unusually high efficiency obtained from "under water" firing is maintained.
- **No Water Line Corrosion.** With the tubes totally submerged, there can be no water line corrosion—the point where tubes in vertical boilers generally fail.
- **Insulation More Effective.** Because it is against heat loss from relatively low temperature steam and water, and not a combustion chamber with high heat loss.
- **Fast Steaming and Dry Steam.** Surface area of water in this boiler is over three times as great as in a vertical boiler of corresponding size. Surface water heats first, as firing tubes are above return tubes, and boiler steams rapidly. Steam is dry because the large area prevents surging.
- **Low Water Line.** A feature of Sellers Horizontal Boilers—simplifies return of condensation direct to boiler without traps or pumps.
- **Two Year Tube Guarantee.** Tubes in Sellers Immersion Boilers are unconditionally guaranteed against corrosion failure for period of two years from date of shipment, provided no corrosive boiler compound or water softener is used.

Gas Company and plant engineers select the Sellers Immersion Boiler in the knowledge that it has proven itself — and that it fulfills all requirements of long life and operating economy, regardless of water conditions.

SELLERS ENGINEERING COMPANY

4860 N. Clark Street **Chicago 40, Illinois**

Conversion from Coal Gas to 100% Propane-Air Gas

By

H. K. Seeley

General Superintendent, Gas Operations
Central New York Power Corporation
Syracuse, N. Y.

WHEN in 1937 the Central New York Power Corporation was formed, comprising both gas and electric operations, a central gas operating department was set up. This department found under its jurisdiction two small isolated coal gas plants in the northern part of the state, neither of which appeared to be in very sound financial condition. In fact the smaller of the two had already reached the stage where the entire gas revenue failed to meet the production expenses, and the other was rapidly approaching the same stage.

Of course, the formation of the new company did not come as a complete surprise, and we had been giving some thought to what was to be done in these two situations, even before the new company was formed. After investigating, I believe, every other alternative, we arrived at the conclusion that the only possible solution of the problem of these two small gas properties was conversion to liquid petroleum gas. Consequently, during the summer and fall of 1938 a propane-air gas plant was installed in Ogdensburg, the larger of the two situations involved. In selecting the larger of the two, we acted against our natural inclination to "try it out on the dog," but the condition of the existing Ogdensburg plant was such that we did not any longer dare to depend upon it as a source of gas supply to the community of nearly 17,000 people.

I suppose that no one ever finishes such a job on schedule. Certainly we were unable to do so in this instance, and while it was our intention to be ready to convert to propane-air gas about the first of November 1938, actually we were not able to start this conversion until the 4th of January in the following year. The fact that the temperature on the morning of the 4th was 16° below zero did not cause us to change our plans, possibly because this is really quite warm for Ogdensburg at this time of the year.

The original mixing plant consisted of two electrically operated Kemp compressor type of mixers, and with really very minor difficulties, this equipment proved entirely satisfactory. It did, however, have one disadvantage; namely, it required electric power to operate the compressors.

Now our Electric Department yields to no one as far as their record for continuous and uninterrupted electric service is concerned, but these two little gas properties are located in what is probably one of the worst sleet belts in the country, and much as we dislike to mention it, the records of the past do indicate a number of complete electric interruptions of hours duration. This point caused us considerable concern, and we had actually succeeded in getting authorized the installation of a gasoline engine-driven electric generator to make it possible to supply the plant with electric power in case of a serious interruption in the normal supply. However, before the order was placed for this unit, we learned of the injector type of equipment manufactured by the Gasair Corporation in California, and decided to investigate the possibilities of this equipment before installing an electric reserve. We therefore ordered for trial a single unit of this type of equipment, and made a temporary installation in Ogdensburg. As a result of our experience with this installation, we altered our plans for the Malone plant and designed it to be completely Gasair equipped, and during the latter part of the year 1940 we installed a Gasair plant in Malone. In this instance the work was also delayed for one reason or another, and it was not until shortly after the first of the year 1941 that we turned the propane-air gas into the mains.

One reason why we were so anxious that this injector type of equipment could be proven successful is that it eliminates the need of gas storage. In both Ogdensburg and Malone the holders were of ancient vintage, and in very poor condition, but I will admit that we had our tongues in our cheeks when we tore down the Malone holder and operated the Gasair plant from the beginning with absolutely no storage of mixed gas. Malone has now operated for five years without a holder and without an interruption of the gas supply. Ogdensburg has now operated nearly two years without a holder and with no interruptions.

Figure 1:—The "Gasair" installation at Ogdensburg, N. Y. shows in the center, simplicity of the four controls. On the right is the main pressure regulator for vapor from the vaporizer. On the left, the air filters and venturis.

With the view of ultimately eliminating the storage holder in Ogdensburg, we installed in 1943, enough Gasair units to meet our peak demand. This installation had been completed just before Christmas 1943, but due to the press of other work and shortage of help over the holiday season, it had been given only a preliminary tryout when on December 31st, the worst sleet storm ever experienced in the north country occurred, and for a full 24 hours the only utility functioning in the city of Ogdensburg was the gas company. It was weeks before normal electric service was restored to the entire area. The gas plant was without service for about 24 hours. The city was even without water service for a day or so, and there was no telephone service for several days. I believe you will understand why we are boosters for the injector type of mixing equipment which operated perfectly during the period.

Production Problems

I shall now take up the several points mentioned in my subject, approximately in order. First as to production problems. I think I can truthfully say that we had no real production problem. Both types of equipment were easily adjusted and functioned satisfactorily from the beginning. Of course, we did have moments of uneasiness, as for instance, one very cold night when one of the operators opened the valve in the line to the holder in order to fill it (the holder) before shutting down for the night, and in so doing he overloaded the heat exchanger which was operating at the time to vaporize the propane, and filled the entire mixing system with liquid propane. However, the automatic valve cut the holder in and we were able to clear the system of liquid propane and start up the mixing plant before the supply was seriously affected.

Despite the fact that there were several other propane-air plants in operation, at the time we were really pioneers in many respects, and in this particular instance we found that the heat exchanger had been designed with insufficient capacity due to lack of data on the subject. A new and larger exchanger completely remedied this situation.

As long as we were dependent upon electric power, it was necessary to maintain an operator at the plant at all times, except between 11 P.M. and 7 A.M. when the load was carried by the holder. Since this holder was the worst one of the several units, we were most anxious to eliminate it as soon as possible. So additional Gasair units were added to the Ogdensburg installation, after which the holder was taken out of service and removed. We now had a sufficient number of the injector type of units to carry the entire load safely at all times, and since they are entirely automatic we have been able to dispense with a regular attendant at the plant.

Mixers

A word at this point about the injector type of mixer. The energy required to mix the gas and to send it out to the distribution system is contained in the liquid propane itself, the only requirement being that the temperature of the liquid propane be kept high enough to provide sufficient vapor pressure. At zero the vapor pressure is about 23.5 pounds, which is just sufficient to force the liquid propane through the heat exchanger where it is gasified and retain enough pressure to operate the injector (about 22 pounds).

In normal operation the vapor is taken from the top of the propane tank, directly to the mixing plant. This results in a constant evaporation of the propane from the surface of the liquid in the tank. This evaporation has a tremendous refrigerating effect. Depending upon a number of factors, such as, the outside temperature, fair or cloudy weather, the load on the gas system, wind velocity, etc., the temperature of the liquid in the tank is apt to be anywhere from 10° to 20° lower than that of the outside atmosphere. Consequently, whenever the atmospheric temperature approaches 10° above zero it is necessary to switch over and take liquid propane from the bottom of the tank and pass it through a heat exchanger. This eliminates any cooling action, due to evaporation, in the storage tank, and the temperature of the liquid simply lags considerably behind the temperature of the atmosphere.

In any locality where temperatures are apt to fall below 10° above zero, some method of heating the propane in the tank is desirable if an injector type of mixing equipment is to be used. In Malone a heating coil was installed in the original propane storage tank. However, none was installed in the first tank at Ogdensburg, and the fact that we were able to get along during the extremely cold weather was due to the use of the mechanical mixers which do not require high inlet pressure. A new tank installed during the past year to increase the storage of liquid propane, is provided with heating coils so we will no longer be dependent upon these machines. They are being dismantled and used for vapor pumps. A 50-50 mixture of Prestone and water is circulated through these coils, being reheated by passing through a heat exchanger.

This about covers the production problems. We have never had any difficulty in making gas of the proper heating value and in ample quantity. During the past winter, due to traffic troubles, we had one or two narrow escapes from running out of propane, particularly in Ogdensburg where the load had increased to a point where we had long realized the capacity of propane storage was too small. In fact we tried to buy a new tank three years ago, but due to war conditions, could not get one. One day a car was spotted on our siding at 2 P.M., after we had already decided to shut off the town at 5 P.M. to conserve sufficient propane to keep the plant from freezing. The ending of the war should remove such difficulties.

Distribution

About the distribution problems. We had no strictly distribution problems that were peculiar to propane-air gas. In both situations the distribution systems were in rather poor condition, and the unaccounted-for very high in percent (35% in Ogdensburg and even higher in Malone), partly because in both places the system had formerly supplied approximately double the number of customers. We all know that a decrease in sales always raises the % of unaccounted-for. Since there is little, if any, of what may be called marginal gas in a propane-air gas plant, the seriousness of a high unaccounted-for is exaggerated by the fact that any gas lost must be produced at the average production cost and not at a cheaper marginal cost. For these reasons, extraordinary efforts were put forward to reduce these figures as much as possible. Partly resulting from these efforts, such as searching for and repairing leaks, cutting off unused mains and services, oil fogging, and the use of carboseal, and partly through increased sales, the unaccounted-for in Ogdensburg has been reduced to less than 8%. Not bad for a place of this size. While good progress has been made in Malone, we have not been able to reach this figure as yet.

In this connection I will mention a point that may be of interest. Usually when we talk of changing to a higher B.T.U. value gas, such

as when mixed or straight natural is substituted for manufactured, an increase in gas unaccounted-for can be expected. This is not necessarily the case when L.P. gases are substituted for manufactured gas, as the specific gravity of the L.P. air mixtures is usually enough higher than that of the manufactured gas to offset the higher heating value as far as the actual leakage is concerned.

One problem which will face anyone converting a manufactured property to L.P. gas air mixture will be the selection of the heating value for the new gas. In this instance we had the advantage of already having had a therm rate among our various gas rate schedules, having operated for a number of years on such a rate, supplying 875 B.T.U. mixed, manufactured and natural gas in Syracuse. If a therm rate is possible, then the heating value of the gas selected can be the one most suitable from the utilization standpoint and the ease with which the conversion can be made. Retaining the same heating value will usually increase both the difficulty and the cost of the conversion.

In our case we set up a small laboratory and tried out propane mixtures of various heating values on burners previously adjusted for the gas then being supplied. We obtained the various mixtures by using a 10 foot meter prover as a holder and mixing gas and air in the proper proportions. We found that a propane-air gas of about 900 B.T.U. content could be substituted for the 585 B.T.U. coal gas with the least amount of adjustment. In fact most top range burners could be used without re-adjustment. This is an important point since it enables these burners to be used by the customers after the new gas had been turned into the mains and before the arrival of the conversion crew. Even some oven burners can be used under the same conditions, but we believe it advisable not to permit the use of such burners until after re-adjustment.

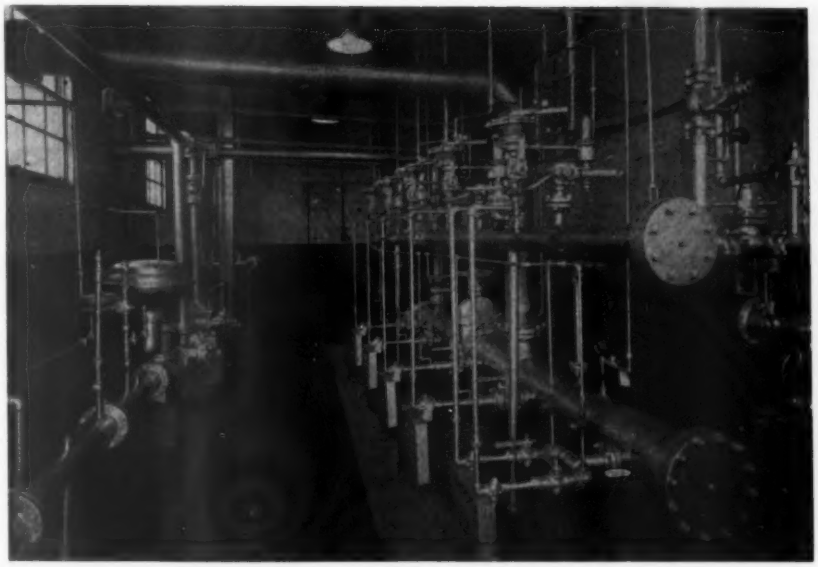


Figure 2:—General view of the Malone, N. Y. installation. On the left the distribution governor for the system. Receiving from the main gas header on the right are five mixing units. Above this gas header is the liquid or vapor header connected to a series of pressure regulators and controls operating through the venturi and air filters (center) just above the floor.

We have had no experience with conversions where the heating value has remained unchanged, but we do not believe that many burners can be used successfully until after re-adjustment under such conditions. The difference in specific gravity is too great, and without the compensating factor of the higher heating value, flash backs will be almost inevitable.

One feature that should be emphasized in connection with the conversion of all types of burners is that while it is usually possible to obtain excellent adjustment from the standpoint of the appearance of the flame, this is frequently accomplished at the expense of a considerable reduction in the heat input to the burner. This, I believe, would be particularly true where there is no increase in the heating value of the gas, and will have to be compensated for by an enlargement of the orifice in the burner cock, or an increase in the pressure in the burner manifold. It was this fact that led to the selection of a 900 B.T.U. gas in our two situations. We were able, usually, to obtain good adjustment and a heat input comparable to the original input without a change of orifice. I do not mean to infer that the acceptable heating values are confined to narrow limits. 925 or 875 B.T.U. gas would probably have served as well as 900 in our case.

Figure 3:—Original mechanical-mix installation replaced by installation shown on the rear wall, which can be seen in better detail in Figure 1.

Burner Ports

Generally speaking, it was not found necessary to enlarge the burner ports on top burners. It was however, found necessary to enlarge the ports on so many of the oven burners that I believe in another similar job we would ream out all oven burner ports to the size found best suited, on the first visit of the conversion crew. Whether this should

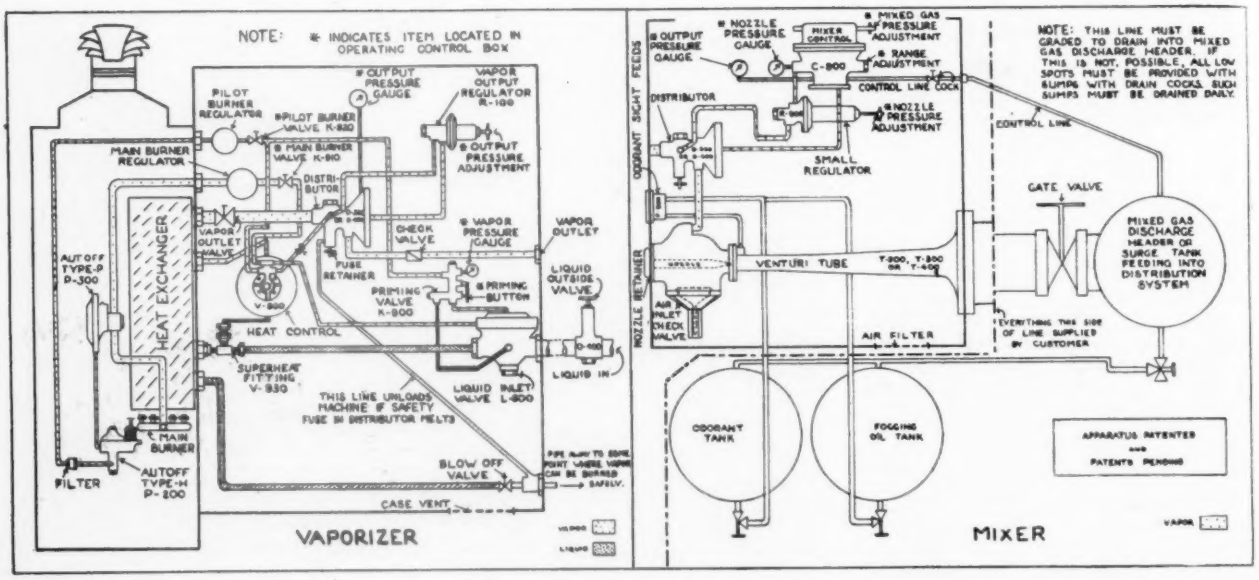


Figure 4:—Flow diagram of "Gasair" vaporizer and mixer.

be done by the crew itself, or by taking the burner to a point where drill presses are available, will depend upon local circumstances. We found the latter method quite satisfactory, if for no other reason than that an adequate stock of small drills could be better maintained at a single point than at many different points represented by the many adjusting crews. The mortality among the small drills is very high, and their cost constitutes a considerable item in the conversion expense.

While on the subject of oven burners I will say that it is frequently necessary, particularly in some older type of burners, to drill an intermediate hole between the existing burner ports. The reason for this is that these high hydrocarbon content gases do not ignite as easily as the ordinary manufactured gas, and in some of the older type of ranges, the oven burner ports are spaced so far apart that the flame will not travel along the burner. This is a serious point as it can be easily understood that an oven burner only partly lighted constitutes a hazard. However, with propane air-gas the hazard is somewhat reduced due to its narrow ignition characteristics. Even in some cases where the ports along the burner itself are close enough together, we found it necessary to drill intermediate ports around the corners to insure that the flame would turn the corner. These ports do not have to be full size, and particularly when a relatively large number of them must be drilled, smaller ports are advisable, as in some cases the increase in the total port area becomes too great to permit proper operation of the burner.

Inspection of Appliances

After considerable discussion and investigation, we decided that it was advisable to make a preconversion inspection of all customers' appliances, and in our opinion the information obtained from such inspection amply justified the cost. In the first place it gave us an opportunity to estimate very closely the special equipment that it was necessary to buy. It also told us where automatic equipment, such as, automatic water heaters, refrigerators, industrial appliances, etc., were located. Such equipment required immediate attention after the turning of the new gas into the mains before the appliance could be used, and the preconversion inspection enabled us to arrange for a conversion crew to reach such appliances at the earliest possible moment. It also enabled us to explain the proposed change to the customer in advance, and eliminated the possibility that some few individuals might not know of the change despite newspaper, radio, and other advertising of the fact that a changeover was contemplated.

I strongly advise that where possible, laboratory trials of the new gas be made, and where possible the conversion crews should be trained in the actual converting of appliances to the new gas before they are sent out into the field. The installation of a small laboratory, equipped to provide both kinds of gases and with typical appliances installed so that the gases may be interchanged, furnishes an excellent place for such a training program. We also feel that each converted customer should be visited, within a short time after conversion, by an inspector. This is particularly true when the conversion crews are made up of men without previous experience in gas complaint work. It is astounding what errors such a man can make in his contact with the customers, not all of them having to do with the adjustment of the gas appliance.

Production Expense

For convenience, because it is a little difficult with our system of accounting to segregate the individual cost of the two plants, the following will be based on the average figures for the combination of the two plants.

For the full year 1944, the average production expense per therm was 11.2c. This is equivalent to slightly more than 59c per M.C.F. of 537 B.T.U. gas. This figure may seem high, but it must be borne in mind that it represents production in two plants, either of which could have supplied the entire quantity of gas without a cent of extra expense other than for the additional propane. Of this 11.2c per therm, slightly more than 9c, or about 81%, represents the cost of the propane itself; and the balance of about 2c represents all the other plant costs, both operating and maintenance.

Distribution Expense

As to the distribution expenses involved. The total cost of operating and maintenance in the Gas Distribution Department for the full year 1944 amounted to $18,273, which in turn amounted to $8.65 per customer. Due to a reorganization which took place in the middle of last year, which resulted in a reduction in the number of employees in

the Gas Department, and due also to an increase in the number of customers, the total distribution cost per customer is now running at the rate of slightly less than $7.00 per year.

Organization

In regards to the organization required for plants of this size, I shall tell you that we have now in each of the two situations, a District Superintendent, and two other employees. These three men do all of the Gas Department work usually handled by such departments, except the customers' service work, which is handled in these instances by a combination gas and electric service department. In both districts we have old employees who, because of their length of service and former jobs, are now getting considerably higher pay than we would give to replacements. However, I believe that it is well to have experienced individuals when they are so few in number.

It is only possible, of course, to have such a small organization when the plant can be operated automatically, and the reduction in force mentioned a moment ago was not possible until we had completed arrangements to permit the full automatic operation of both plants. This automatic operation, with no storage facilities, I think is only feasible when the injector type of equipment is used.

Alarm Systems

To take care of the rare occasions when something happens at the plants which necessitates immediate attention, both plants are equipped with an alarm system which rings in the service center during those hours when there is always someone at this center, and in the home of a part time employee during nights, holidays, and Sundays. This alarm functions when any one of several things happen. The only duty of the part time employee, who is not one of our three regulars, is to call by 'phone, one of the gas department men and tell him that something is amiss at the plant. The items controlled by the alarm system, which incidentally does not distinguish between the various items, are the heating value of the gas from a recording calorimeter, the pressure on the city main, the pressure in the vapor header of the Gasair machines, and the pressure in the gas-fired boiler. Should any of the items rise above or fall below the limit set on the alarm system, the alarm sounds. This arrangement has worked entirely satisfactorily. In selecting the location of the off-hour alarm, we were fortunate perhaps in finding families in which there was at least one individual capable of handling the telephone, who was always at home. In any situation where 24 hour attendance is maintained by any department, such as an affiliated electric department, service department, garage, etc., the point where such attendance is located should be a good location for the alarm bell. Lacking any of these, arrangements may be made with the telephone company to handle this matter as part of their service.

In concluding this talk I am going to refer to a statement made to me recently by one of the district superintendents. He stated that after 25 years in the gas business, 6 of which had been in the operation of gas-air plants, he prefers gas-air to manufactured gas. He says that they have definitely fewer complaints per customer, practically none of the disagreeable jobs that are always present in manufactured gas plants, and that his job is a much more pleasant one than formerly.

DO YOU HAVE A *Tank problem?*

If you do we have the facilities to supply the answers regarding

★ **Tank Design**
An engineering department with experience and capabilities to tackle any practical size or shape, high or low-pressure tank, or special processing equipment.

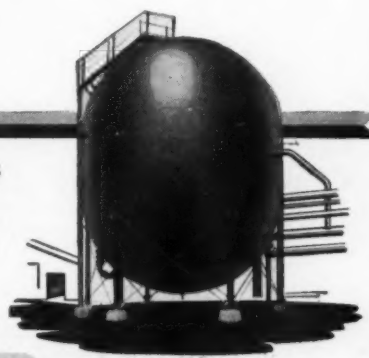
★ **Tank Fabrication**
A factory capable of fabricating six million pounds of materials per month. Equipment includes the most modern forging, welding, shearing, punching and riveting equipment.

★ **Tank Erection**
Many unusual cost-reducing kinds of equipment specially designed by Stacey Brothers. We have erected thousands of tanks with capacities ranging up to ten million cubic feet.

A Stacey Brothers 1,500,000 cubic foot Dry Seal Gas Holder.

★ **Special Structures and Products**
We design, produce and install literally hundreds of different kinds of special structures and products of aluminum, steel and steel alloys.

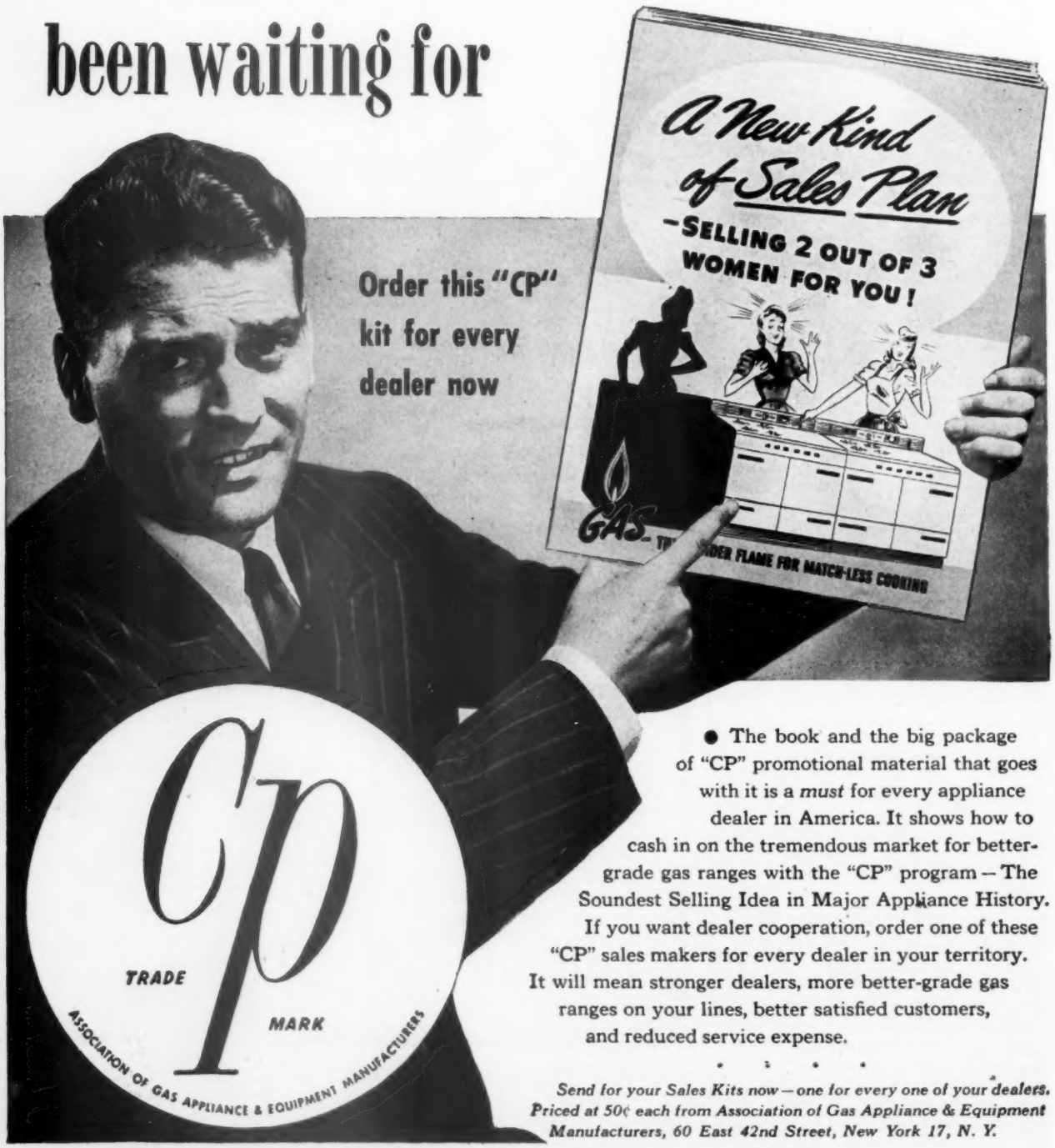
Stacey Brothers Gas Construction Co.
One of the Dresser Industries
5535 Vine Street Cincinnati, Ohio



A Stacey Brothers vertical high-pressure tank.

Stacey Brothers TANKS

Here's the program your dealers have been waiting for


A New Kind of Sales Plan
—SELLING 2 OUT OF 3 WOMEN FOR YOU!
GAS—THE WONDER FLAME FOR MATCH-LESS COOKING
Order this "CP" kit for every dealer now
CP
TRADE MARK
ASSOCIATION OF GAS APPLIANCE & EQUIPMENT MANUFACTURERS

● The book and the big package of "CP" promotional material that goes with it is a *must* for every appliance dealer in America. It shows how to cash in on the tremendous market for better-grade gas ranges with the "CP" program — The Soundest Selling Idea in Major Appliance History. If you want dealer cooperation, order one of these "CP" sales makers for every dealer in your territory. It will mean stronger dealers, more better-grade gas ranges on your lines, better satisfied customers, and reduced service expense.

• • •

Send for your Sales Kits now — one for every one of your dealers. Priced at 50¢ each from Association of Gas Appliance & Equipment Manufacturers, 60 East 42nd Street, New York 17, N. Y.

Gas Ranges Bearing The "CP" Seal Will Be Made By The Following Manufacturers:

A-B STOVES, INC.
AMERICAN STOVE CO.
CALORIC GAS STOVE WORKS
CRIBBEN & SEXTON CO.
DETROIT-MICHIGAN STOVE CO.
THE ESTATE STOVE CO.
GLENWOOD RANGE CO.
JAMES GRAHAM MFG. CO.
GRAND HOME APPLIANCE CO.
HARDWICK STOVE CO.
A. J. LINDEMANN & HOVERSON CO
O'KEEFE & MERRITT CO
ROBERTS & MANDER STOVE CO.
GEO. D. ROPER CORPORATION
STANDARD GAS EQUIPMENT CORP.
THE TAPPAN STOVE CO.
WESTERN STOVE CO., INC.
In Canada: CLARE BROS. & CO., LTD.
GURNEY FOUNDRY CO., LTD.
MOFFATS, LTD.

GAS—THE WONDER FLAME FOR MATCH-LESS COOKING

Product Designs of Today

Features of New Gas-Fired Appliances

WITH the coming of peace *American Gas Journal* realizes that consumer buying habits must be modified over those which were appropriate in wartime, if we are to achieve the full employment which the nation hopes for. The *Journal* knows that many millions of women in our country are anxiously awaiting the introduction of the labor-saving devices so often talked about on the radio and discussed in newspaper and magazine articles. We also are aware that many consumers expect far more drastic changes in these appliances than industry generally has in mind for them.

To fulfill the obligation of keeping its readers fully informed on the latest developments in appliances design The *Journal* has just completed an extensive survey of the industry and outlines in the following pages some of these projected post-war gas ranges, and water heaters. These products are representative of what may be expected in the industry, although they cover but a few of the products which will eventually be introduced. Many of these products had their beginning before the war, while others were in the process of being tested in our laboratories and in consumer's homes, just as the war stopped all production.

It is to be observed that many of these appliances are improved 1942 models and as very few of these ever reached the domestic market they will be new to millions of women. Many manufacturers have added new appliances to their line and nearly all represent brands which are household words in our nation.

Gas ranges will be better to look at, trim and neat in appearance, as well as practical; having been designed by the nations most creative designers.

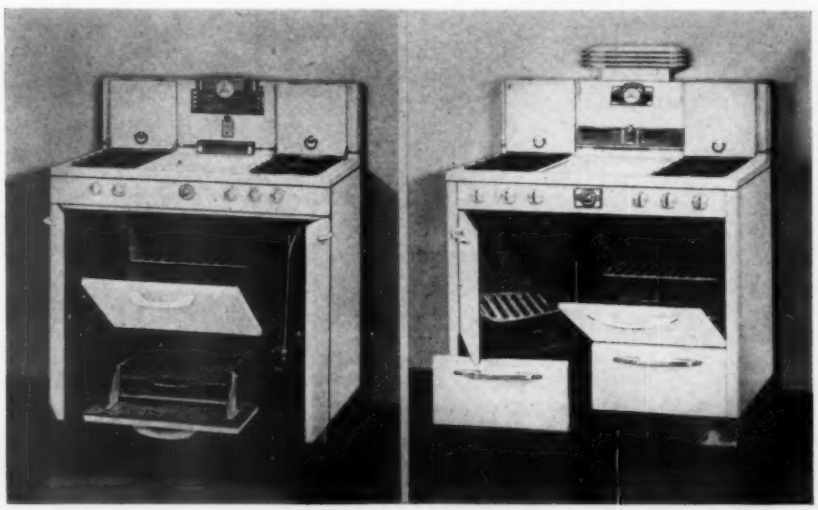
These ranges are the result of the best engineering in the industry. They have accurate heat controls; easy to clean linings, with rounded corners; insulated ovens; removable top burners automatically lighted with at least one giant burner; pull out drip trays and built-in vents thus reducing decorating costs in the kitchen due to stains. Most of these products meet the very rigid "CP" requirements. These products truly bring the consumer all the many advantages of cooking with gas fuel such as speed, economy, flexibility and cleanliness. They will contribute largely to the cooler, cleaner, easier to work, "New Freedom Gas Kitchen".

Magic Chef No. 7200 & 7300

The two popular models of Magic Chef shown are fully equipped with all the time-tested features which promise ideal cooking service—automatic top burner lighting—non-clog burners which give a wide range of heats. Automatic oven and broiler lighting on CP models —the famous Red Wheel Oven Heat Regulator which keeps a constant temperature, saves gas and gives perfect baking results. In addition these Magic Chefs feature the Minute Minder, the top light, and an outlet for electric appliances. Coveralls give the ranges a neat appearance when not in use. Wide table top space is provided for preparation and serving. Chrome trim on handles, flue grill, and switches gives the ranges lasting beauty and sparkle.

No. 7200 has a Swing-out Broiler while 7300 has the drawer-type broiler which pulls out. Ovens are roomy. These ranges are built for service and satisfaction with all-steel construction and porcelain enameled interior and exterior. Good insulation keeps the heat in; keeps the kitchen cool in summer. Cleaning a Magic Chef is a simple task, requiring little time and effort. Burner and broiler trays may be washed in the sink whenever necessary.

Manufactured by American Stove Company, Cleveland, Ohio.



Model 7300 Model 7200

Roper Ranges

Among the new Roper models offered by Geo. D. Roper Corporation, Rockford, Illinois, are the two illustrated here, designated as Nos. 1-7304 and 1-3804. Both units shown have "staggered" tops, but five different top burner arrangements are available.

Roper Model No. 1-7304

Roper Model No. 1-3804

The 7300 series has the following dimensions: Length 41", depth 27½", height of cooking top from floor 36", overall height 53¾".

Standard equipment in these models include: Top lighters, enameled folding burner covers, enameled burner trays, combination oven control and valve, oven and broiler insulation, and "Silent Roll" broiler with grill, enameled pan and chrome serve tray.

Additional equipment includes electric lights, time clock, electric oven light and 4-hour oven shut off. Assembled also with black base if desired.

The 3800 series dimensions are: Length 40", depth 28", height to cooking top 36", overall height 50".

Standard equipment in the 3800 series include the features listed above and have storage drawers on the left. Cooking compartments are on the right.

Estate Heatrola Gas Ranges

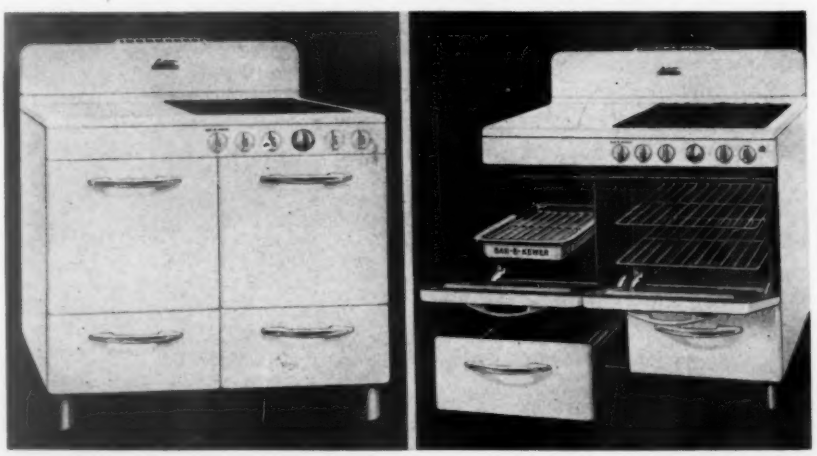
The 1700 series gas range line consists of four models. The 1701, cluster top and low broiler; Model 1703 (illustrated), cluster top with Bar-B-Kewer; Model 1704, divided top with Bar-B-Kewer; Model 1707, cluster top with Bar-B-Kewer and Grid-All.

Two-oven capacity in a one-oven range is a feature of Estate Heatrola Gas Ranges. The Bar-B-Kewer, standard equipment on three of the four models in the Estate Heatrola line, is designed to permit low temperature broiling or Bar-B-Kewing of whole hams, chickens, turkeys and other tender joints. On the fourth model, the lowest priced in the line, is a standard pull-out drawer broiler.

Other features of the Estate Heatrola Gas Ranges are: the Air Flow Oven; one-piece top; simmer burners; and on the deluxe model, the Grid-All. All four models are 38 inches wide and other measurements conform to standards so that any model will line up with modern kitchen cabinets. The ovens are all 17 inches wide, 14 inches high and 20 inches deep.

Accessories, including lamps, interval timers, TimeEstates, oven lights and glass door windows can be added as optional extra equipment.

Manufactured by The Estate Stove Co., Hamilton, Ohio.



Estate Heatrola Model 1703

Glenwood Ranges for 1946

Glenwood Gas Ranges for 1946 will include new features for cooking convenience, cooking comfort and kitchen beauty.

The new high speed, "Even-Heat," temperature controlled ovens —available in "CP" models with automatic lighting and automatic clock control—will have smooth "Easy-Clean" linings with rounded dome construction. Oven interiors will be brighter and easier to clean.

Bright aluminum "Flexi-Flame" top burners with heat reflector bowls will give improved cooking temperature flexibility with easier control. "Signal Click" valves simplify burner adjustments for better top cooking performance and greater convenience. The tops will be one-piece construction with circular burner openings and newly designed grids that minimize heat transfer to working surface of range.

A new insulating feature that includes an "air wash" around ovens has greatly reduced exterior surface temperatures and will mean greater cooking comfort.

A high broiler model with Glenwood's Roll-o-Matic swingout broiler will be among the first new models. This full size broiling oven rolls out automatically as door is opened.

New models will include:

1. 40" divided top range with compartment and drawer, broiler under oven.
2. 40" Divided top with high broiler.
3. 37" Standard top with compartment.
4. 20" Apartment size.
5. 40" Utility combination for gas evoking and heating with coal, oil or gas.

Optional equipment, including

IT'S AN ILL WIND THAT *Blows* NO GOOD—

The superiority of GAS cooking service—the unfailing dependability of UNIVERSAL GAS RANGES . . . . both, under the difficulties of war-time living, have proven full right to prized consumer preference.

To use the new abilities and skills—materials and methods that have come out of our production for war, to make UNIVERSAL even more worthy to be *America's Preferred Cooking Choice* is our objective . . . . its realization will bring further assurance of continued acceptance for GAS—*America's Preferred Cooking Fuel!*

CRIBBEN & SEXTON CO.

Manufacturers of Universal Gas Ranges

700 N. SACRAMENTO BLVD. CHICAGO 12, ILLINOIS

SPENDING TO MODERNIZE NOW IS SPENDING TO SAVE *

* When You Choose GARLAND

GARLAND Restaurant Gas Range No. 83
Six Open Top Burners, Two Ovens, Broiler and Griddle.

Because old-fashioned worn-out equipment wastes fuel, food and the chef's time.

Because new improved Garland equipment pays for itself through savings. And because savings in the kitchen are becoming increasingly important.

A point-by-point comparison will prove that you get extra values—everywhere in a Garland. Regardless of your food requirements, there is a Garland unit or series of units to do your cooking faster, easier and more economically. Call your food service equipment dealer, or write to us for full information.

LEADER IN COMMERCIAL GAS COOKING EQUIPMENT

GARLAND

Detroit-Michigan Stove Co., Detroit 31, Michigan

GAS IS THE IDEAL FUEL AND AT ITS BEST WITH GARLAND HEAVY DUTY EQUIPMENT

electric time reminders, condiment sets, electric flood lights and coveralls will be available.

Delivery is anticipated for late in the first quarter for most of these new ranges.

Manufacturer: Glenwood Range Co., Taunton, Mass.

40" Glenwood Gas Range with divided top, broiler under oven, storage compartment and drawer.

40" Glenwood Utility Combination for gas cooking and kitchen heating. Heating section to be available for coal, oil or gas.

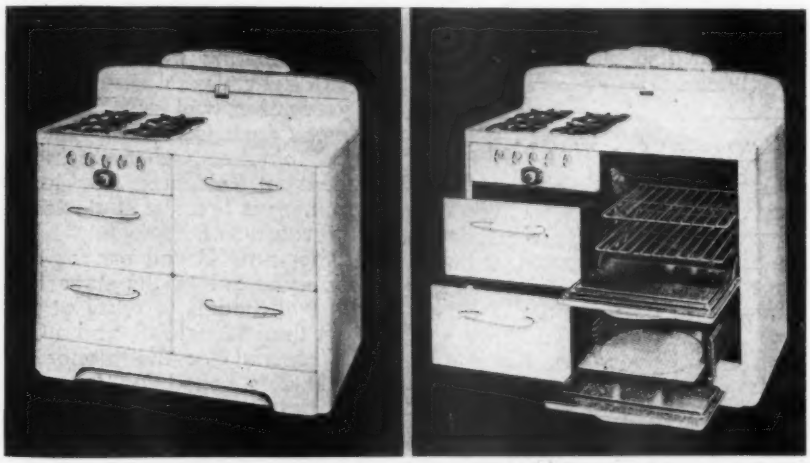
The Oxford Universal

Outstanding features of the Oxford are:

One Giant and Three Standard Porcelain Alltrol Universal Simmer-Save Self-Lighting Top Burners.

Porcelain Draftless Precision Bake Oven—18" Wide by 19¾" Deep by 14" High.

White Porcelain Thriftop with Four Round Removable Porcelain Cast-Iron Thrift-Grates.



Cribben & Sexton Co. Oxford Universal Gas Range

In-a-Drawer Broiler with Drop Front Section — Roller Bearing Operation — Insulated.

Smoke Proof Chrome Broiler Grid with Stippled Porcelain Broiler Pan.

Super Oven Insulated with "Super-Therm" Rock Wool Insulation Clear Around Top, Back, and Side Walls.

Thermostatic Oven Heat Control —250° to 550°.

High Speed "Low to High" Temperature Precision Oven Burner—Makes Possible Complete Range of Oven Temperature Control—250° to 550°—Plus Speed in Preheating to Any Temperature Desired.

Porcelain Drip Tray.

Two, Ribbon Bar Oven Extension Racks with Stop Catch.

One Piece Porcelain Turret Main-Top with Integral Back Guard.

Two Roomy Service Utility Drawers with Finger Tip Touch Roller Bearing Operation.

Porcelain Flue Housing with Two Porcelain Condiment Jars.

Rigid Skyscraper Angle Iron Frame Construction — Reinforced with Welded Iron Base—Maximum Structural Strength.

Chromium Drawer and Door Handles.

Manufactured by Cribben & Sexton Co., Chicago 7, Ill.

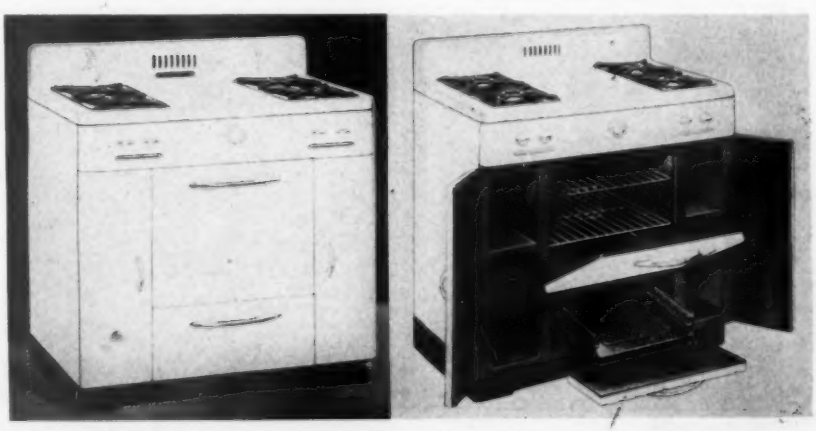
This company also offers the "Eton" Universal—a full size range, 38" in width having all basic features essential to high standard performance. Has one giant and three standard burners, automatic oven control, insulated oven, porcelain enamel finish and two service drawers.

Hardwick Gas Range

Shown here is Model 186 S.E., manufactured by Hardwick Stove Co., Cleveland, Tenn. An outstanding feature is the large oversize oven measuring a full 18 inches wide and made in one piece, all porcelain. The 36-inch wide divided "Monotop" forms a one-piece seamless top and back-guard unit.

Standard features: Roll-out broiler, porcelain Speedex top burners —two of giant capacity. Removable cooking top sections, two storage compartments, oven heat control, top burner lighter, Fibreglas insulation. The range is finished in genuine porcelain enamel except lac-

Hardwick Range Model 186 S.E. in closed and open position.



quered base. Flush to wall construction, modern recessed base. The oven has the latest high speed, low temperature burner, equally efficient for fast pre-heating or slow-roasting. Porcelain burner grates and cooking top.

Oven measures 18" wide x 14¼" high x 19" deep. Floor space 36" x 23¼". Height to cooking top, 36". Shipping weight approximately 275 pounds.

Also assembled as Model 180 S.E. without oven heat control.

Caloric Ranges

Included in the products of Caloric Gas Stove Works, Philadelphia 7, are two range models in their "Luxury" line.

Model 1424-LM, as illustrated, is a 40" divided top model, equipped with oven heat regulator, Harper Simmer Burners, lights, minute minder and cover-top. Model W1464-LX is a six-burner range built on a 40" chassis and equipped with oven heat regulator, Harper Simmer Burners, cover-top, lights, waist high broiler and visible oven door with interior light. Both models have one-piece tops, the backguard and working surface being stamped from one piece of metal, thus avoiding dirt-catching crevices.

Caloric cabinets are streamlined, both functional and attractive. They can be installed flush to the wall with toe-room base to avoid scuffing of shoes.

The front frame is also stamped from one piece of high-grade steel instead of the old-fashioned "cast" frame. This type of construction assures greater rigidity and prevents warping. One of the most important features of the Caloric Luxury line is the famous Harper Burner System for better cooking results.

The 1946 line will include a complete choice of top burner arrangement on 36 and 40" chassis. A "CP" model, new in design and appointment, will also be included in the 1946 line.

Caloric Model 1424 LM

Caloric Model W1464 LX

"Grand" Post-War Models

Grand Home Appliance Company, Cleveland 4, Ohio, announces the start of production on the first model of its post-war line of gas ranges. The new model, to be furnished in both standard and deluxe versions is a 40" range of flush-to-wall one-piece top design, conforming to approved overall dimensions for modern kitchen layouts. Elevated broiler is on left and 18" oven on right. Cooking platform is divided, with giant burners in both front positions.

Equipment will include Charcolator radiant broiler, redesigned with improved radiants and stainless steel crown sheet. Also to be included is a "Safe-Tee-Kee," a device which permits closing off the gas supply to all burners to prevent tampering by the youngsters.

The deluxe version, to be ready in December, will include a Brooks Stevens designed fluorescent lamp, in combination with matching condiment set, Telechron electric clock and interval timer, and electric convenience outlet.

Other new Grand ranges are to be announced in the near future, with two models to retail at prices lower than Model 746, and a Grand "CP" model for the higher price brackets is scheduled for production early next year.

"Grand" post-war models; Standard and Deluxe versions. Open, Model 746; Closed Model D746.

Water Heaters

Water Heaters. Those designed to-day generally recognize the fact that water heating in many homes in the past has been inadequate. They also recognize the probable increased usage of hot water at higher temperatures due to a greater knowledge of sanitation, and proper temperature of hot water for the various tasks in the home. Among the more important of these tasks will be the wider use of automatic laundry machines and dishwashers.

The trend in water heating is to better insulation, better rust resistant tanks, better controls and units designed at counter heights for kitchen installation.

It is also recognized by the industry that the minimum recommendation for normal average domestic hot water should be that no heater of less than 30 gallons sto-

age capacity should be specified for domestic installations. Most 20 gallon installations in the past have been inadequate and have proven to be very unsatisfactory. The adjoining table gives a general rule which might be a good one to remember.

Bedrooms	Bathrooms	Tank Capacity
1 to 2 incl.	1	30 gallons
3 to 4 incl.	1	40 gallons
2 to 3 incl.	2	40 gallons
4 to 5 incl.	2	50 gallons
3	3	50 gallons

"Smithway" Water Heater

Designed for beauty, economy of operation and long life, the "Smithway" automatic gas storage water heater embodies recognized engineering features.

The inner tank with central flue is lined with Permaglas which is permanently fused to the heavy-gage steel, and has a smooth, lustrous blue surface. The outer shell has white enamel baked on both sides.

Fiberglas insulation in compressed form provides adequate insulation.

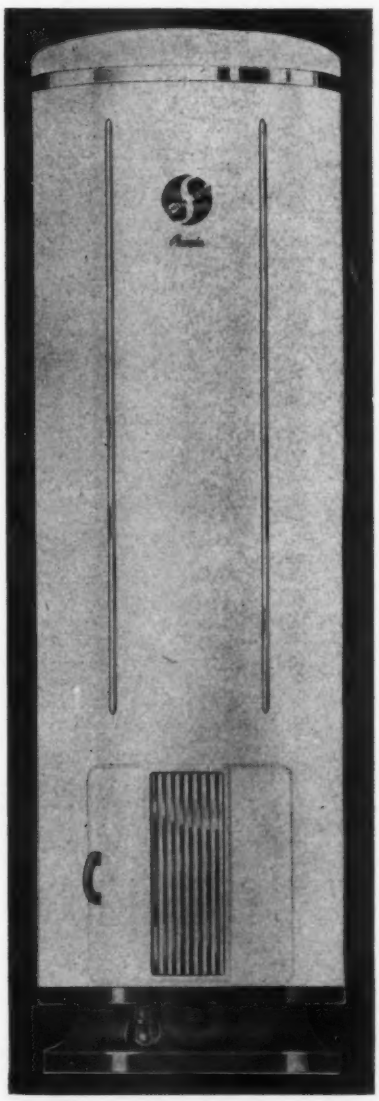
Controls housed inside the shell are protected by a convenient hinged door.

Uniflow burner is of cast iron with raised parts. A swing-drain faucet permits draining the tank when necessary.

Built in sizes from 20 to 75 gal. capacity—overall dimensions follow:

Size	Height In.	Dia. In.
20 Gals.	51 7/8	18 3/8
30 "	63 7/8	18 3/8
45 "	63	22 7/16
60 "	67 3/8	24 3/8
75 "	77 3/8	24 3/8

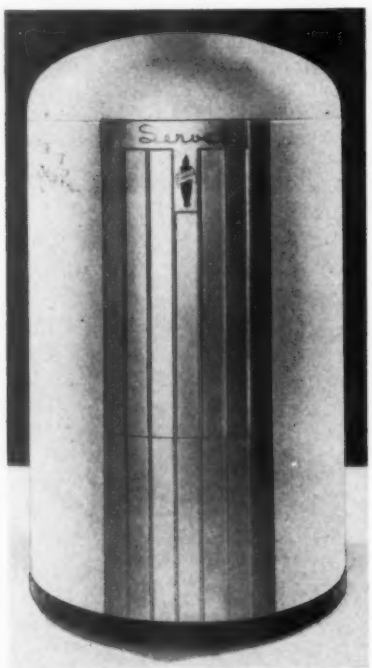
Manufactured by A. O. Smith Corporation, Milwaukee, Wisconsin.



"Smithway" Water Heater

Servel Automatic Gas Water Heater

As soon as tools and material are available, Servel, Inc., Evansville, Indiana, manufacturers of the Servel Gas Refrigerator, will produce a new line of gas water heaters.



Servel 30 Gal. Water Heater.

In addition to the 30-gallon model illustrated, 20-gallon and 45-gallon sizes will be manufactured. All heaters will be of the automatic storage type with 100 per cent safety controls on main burner and pilot. A spherical tank is used in the 20-gallon model and elongated spheres in the 30-gallon and 45-gallon sizes.

The over-all dimensions of the 30-gallon model are: 24 inches in width, 44⅜ inches in height, and 26¾ inches in depth, including draft diverter. These dimensions are shorter and greater in diameter than the conventional 30-gallon automatic gas water heater. Preference for heaters of shorter height and larger diameter was shown by gas utilities representing over half of the gas meters in the United States, in a recent appliance survey conducted by the American Gas Association.

One of the features of Servel's new line is the amount of insulation the company's engineers have been able to use in this heater. Insulation will average more than 50 per cent thicker than that used in conventional type automatic storage gas water heaters, it is said.

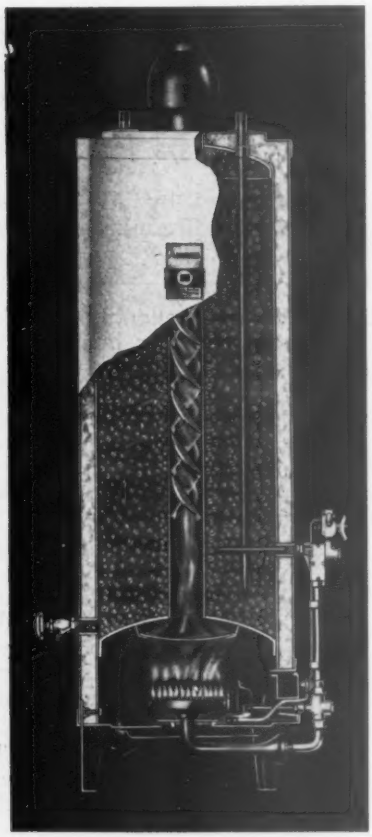
The new gas water heater, like the Servel Gas Refrigerator, may also be used with liquefied petroleum gas.

The "Budget" Water Heater

The "Budget" is a Gas-Fired Storage Water Heater embodying many outstanding features that insure long service and economical operation. It is a product of the American Radiator & Standard Sanitary Corporation and its features include a heavy galvanized tank tested to 300 pounds, a heavy pressed steel base and legs, and rockwool insulation. It is of the center flue type and is available for either manufactured, natural or liquefied petroleum gas. It is made in three sizes; twenty, thirty and forty gallons storage capacity. It also includes an attractive steel jacket finished with a durable white baked enamel and black trim.

A special cast iron plate under the burner provides proper distribution of air, improves combustion and prevents leakage of combustion products through the fire door. Single flue is provided with steel baffles of spiral design to effect maximum heat transfer from the hot gases. Has snap action thermostat with indicator to set at any de-

sired temperature. The thermostatic pilot prevents gas flow if pilot is not burning.



"Budget" Water Heater

Dimensions are as follows:

Size	Height, In.	Dia. In.
20 Gal.	61	15 1/4
30 "	59	18 1/2
40 "	70 1/2	18 1/2

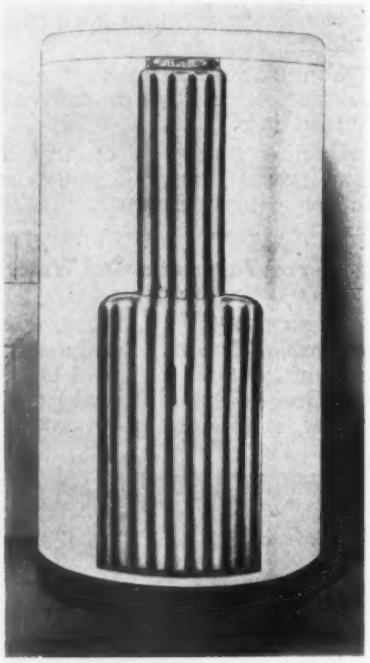
Pittsburg Water Heaters

Revealing clean-cut streamlines, the new Pittsburg Automatic Water Heater, Model 21, is now ready for production.

All controls are concealed by the durable, baked-on white enamel steel cover over a sturdy tank of copper or galvanized metal. It shows revolutionary improvements over the pre-war model.

In addition to its attractive appearance, it has such practical features as a new blanket type insulation of mineral wool that gives even insulation throughout the tank thus holding heat loss to a minimum. A full automatic shut-off and pilot control is a safety feature enhancing its usefulness in the home. Another exclusive innovation is the improved silent, non-clogging raised drilled port-burner.

Model 21, illustrated here, comes in twenty, thirty, forty and fifty gallon sizes in models to use all types of gas.



Pittsburg Model 21

The Pittsburg Water Heater Corporation, Pittsburgh 22, Pa., will also produce 25-gallon and 75-gallon automatic storage heaters, plus a complete line of Booster, Instantaneous and Multi-coil models.

Crane Water Heaters

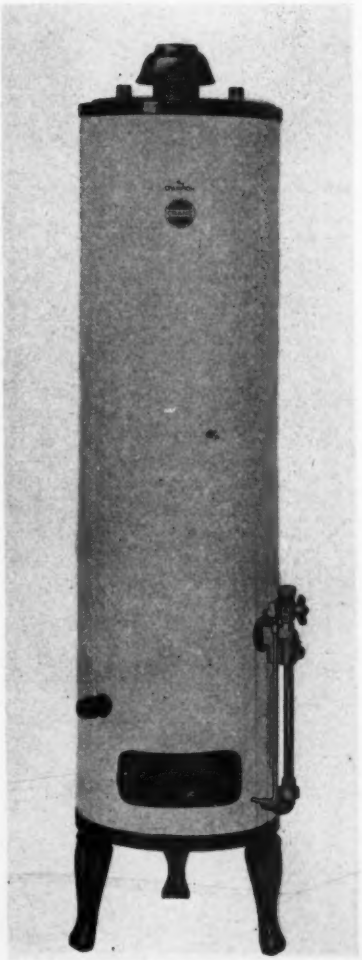
Crane automatic gas water heaters, manufactured by Bastian-Morley Co., Inc. La Porte, Indiana, are built in styles and sizes to meet every water heating requirement—from the smallest cottage to the largest hotel. Each model is especially constructed for operation on any specific type of gas. Tanks, controls and equipment are all carefully engineered to insure uniformity of parts, coordinated operation and highest efficiency.

Every Crane gas water heater is made as a single unit which performs the twin functions of heating and storing water. All models carry the Seal of Approval of the American Gas Association.

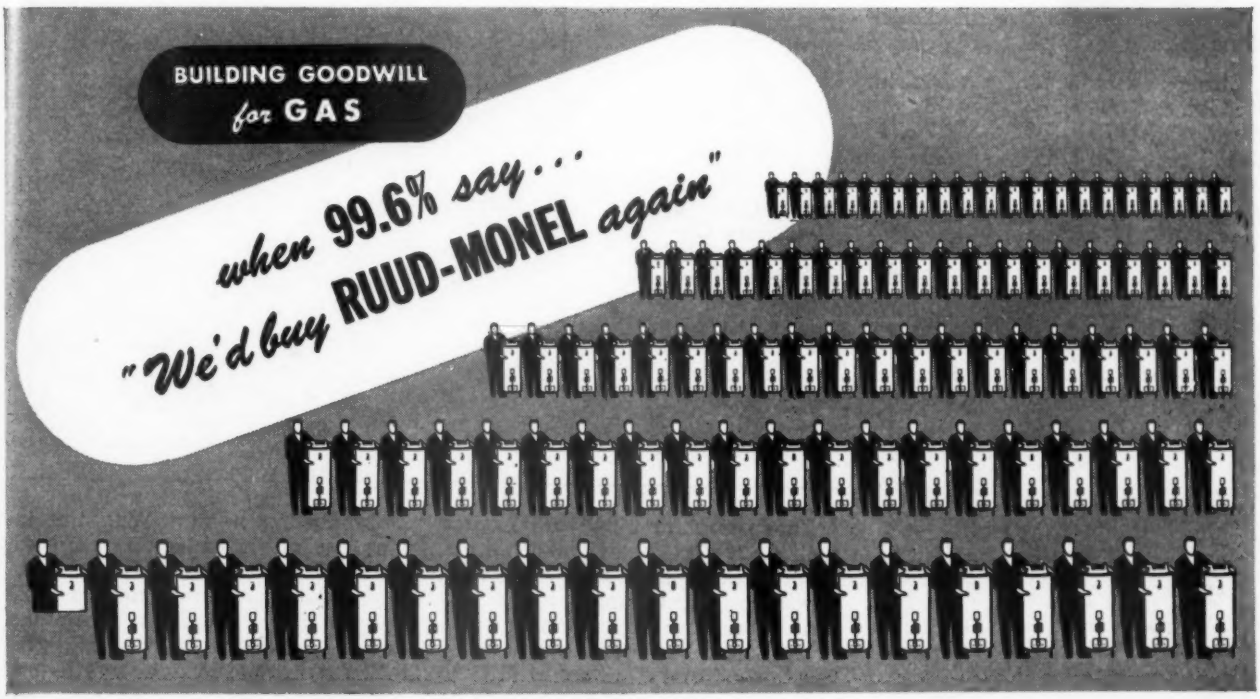
The two most popular current models are the Crane Champion and Royal Heavy Duty gas water heaters. The Champion, in 20-, 30- and 40- gallon capacities, offers Crane dependable quality at low cost. Among its operational features are included a multiple heat deflector, Fiberglas insulation, bimetal safety gas control, snap-action thermostat, extra heavy galvanized steel tank, temperature control dial and drilled port Bunsen type burner.

The Royal Heavy Duty is a combination booster and storage gas water heater for large installations such as hospitals, restaurants, hotels, stores, apartment buildings and industrial plants. Storage capacities of 55, 75 and 85 gallons are offered, with heating recoveries up to 210 gallons per hour, 60° temperature rise.

A new post-war line of Crane gas water heaters, when completed, will offer additional models and sizes with vast improvements in efficiency, operational features and appearance. Crane gas water heaters are distributed nationally through Crane Co. branches and wholesalers.



Crane "Champion"



This is *customer acceptance*. Make it work for you.

In a nationwide poll among owners of Ruud Automatic Gas Water Heaters with Monel* Tanks we asked: *If you had to buy a water heater again, would you buy a RUUD-MONEL?*

Of each thousand owners, 996 answered "Yes"!

The chances are, of course, that few of them will ever have to buy another. A Ruud Water Heater with its rust-proof Monel Tank provides perfect hot water service for years and years.

Even so, this overwhelming enthusiasm of RUUD-MONEL owners is significant. First, because it indicates recognition and appreciation of the advantages of having *all* the hot water needed, and of having it instantly at hand at any hour of the day or night.

It's significant, too, as an indication that RUUD-MONEL owners haven't been plagued with service interruptions and maintenance problems.

And—third—it's a measure of their satisfaction with the cleanliness, the convenience and the rock-bottom economy of *GAS*.

So—put this customer acceptance to work. Let the praises of happy RUUD-MONEL owners boost your appliance sales. Let your customers' endorsement to friends and neighbors help maintain the dominant position of *GAS*—the ideal fuel—in the American home.

Sell RUUD-MONEL, the name that thousands know and accept. There's a Ruud Automatic Gas Water Heater with Monel Tank for every domestic use. Write us for full information.

*Reg. U.S. Pat. Off.

RUUD MANUFACTURING COMPANY, PITTSBURGH 1, PA.

H_2OT STUFF

★ Where is the Ruud Automatic Gas Water Heater which has been in daily use for the longest time? Tell us about *your* candidate for long-life honors. But remember: Be sure it's *really* an old-timer. There are many active Ruuds which have passed the 40-year mark.

★ One of the Ruud slogans which has served for many years is:

"A quality line since '89"

That's right! For 56 long years devoted solely to the manufacture of gas water heaters, quality has been the principal objective of the Ruud organization.

★ Another Ruud slogan through the years has been:

"Buy once—buy wisely—buy RUUD"

No dealer—or customer—will ever go wrong by following that simple six-word buying guide.

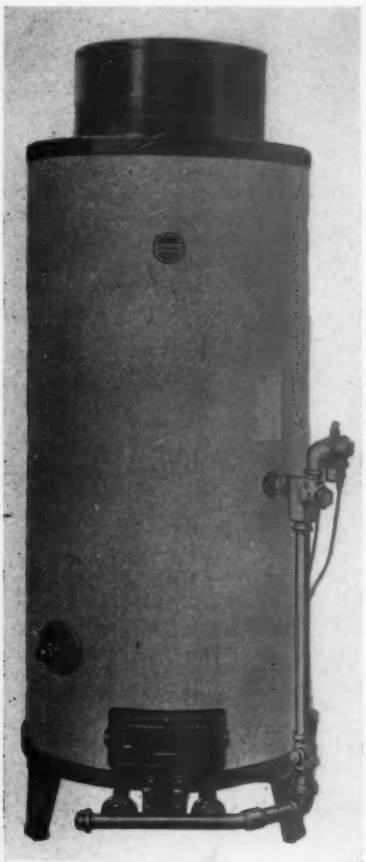
★ New automatic washing machines will be like autos without gasoline if they're not hooked up to the *right* hot water supply. For these machines require hot water at the correct whiteness-retention TEMPERATURE . . . and in the proper dirt-removing QUANTITY. In short, RUUD-MONEL Hot Water Service, fueled by *GAS!*

★ Making a big hit in commercial and industrial fields is the new Ruud Multi-tube Automatic Gas Water Heater. Nineteen volume water heating sizes. Write for catalog and prices.

RUUD GAS MONEL . . . perfect partners for *Automatic Hot Water Service*

Crane Champion overall dimensions follow:

Size	Height In.	Dia. In.
20 Gal.	64 7/8	16
30 "	70 3/8	17 3/4
40 "	70 3/8	20



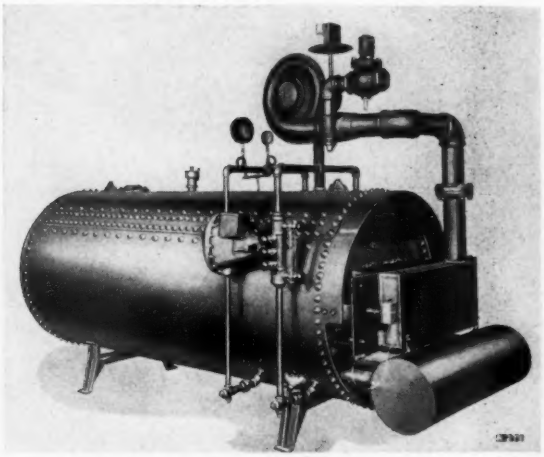
Royal Heavy Duty Storage

Size, Gal.	Height In.	Dia. In.
55-70	70 7/8	25 7/8
50-105	71 3/4	26 7/8
75-140	70 7/8	30
85-210	77 7/8	30

Sellers Immersion Heater

In this Sellers Water Heater, the storage tank and heater are combined in a single unit. Installation is simple because there is no separate tank with piping and valves to install, and radiation loss is reduced. Material is saved, too.

The heating is done by "immersion firing"—the gas is actually burned "inside the water" by a set of burners each firing into an alloy tube extending horizontally through the heater. Through these firing tubes, which are completely surrounded by water, heat is transferred to the water and the spent gases exhausted at the other end.



Sellers Immersion Automatic Gas Water Heater and Storage Unit.

These heating tubes are located well above the bottom of the tank, to prevent heat in that area from hardening lime and sludge deposits. Constant expansion and contraction of tubes loosens any scale that may form. This scale falls to a settling place and remains there harmlessly until flushed out in cleaning the heater. With the insulating effect of scale removed, the heater can operate at its original efficiency throughout its life.

Automatic controls maintain the desired water temperature and protect the heater. Made by Sellers Engineering Company, Chicago 40, Illinois.

Domestic Gas Consumption in Kansas City, Mo.

At a company meeting of The Gas Service Company held in Kansas City October 9th, Ben C. Adams, President, offered some interesting data on the growth of domestic business. He said "We have done so well in building our gas load for house heating that there is no longer a sales resistance."

He stated that when the company first entered the business in this territory, there was very little acceptance of gas except for cooking and water heating. Gas for heating was used for only a small amount of space heating.

The Cities Service Gas Company had previously acquired the various pipeline systems in this area and through addition of gas fields and the adding of additional pipeline facilities and through the expenditure of millions of dollars, increased the gas supply to those cities where the distribution companies were operating.

From the beginning these distribution companies began promoting house heating with gas, at first through a combination gas-oil burner. Then when the gas supply began to be more adequate and dependable, gas designed furnaces proved to be the essence of heating enjoyment. Popular acceptance of gas for heating grew and grew mostly through hard work and convincing sales departments and the gradual but permanent acceptance of gas by the public.

As a comparison of the growth in domestic business, greater Kansas City is a good example. In 1926 a peak load of the Kansas City Gas Company and The Wyandotte County Gas Company was approximately 30,000,000 cubic feet. In 1943 the domestic peak for greater Kansas City was a little more than 92,000,000 cubic feet.

Other comparisons are interesting and it can be shown as a whole approximately ten times more gas is used for domestic purposes in a peak month in Winter than during the hottest Summer month. Taking an average home for example, customers using 1,000 cubic feet per day in the Summer will increase their requirements on the hourly peak in the Winter at the rate of 20,000 cubic feet per day.

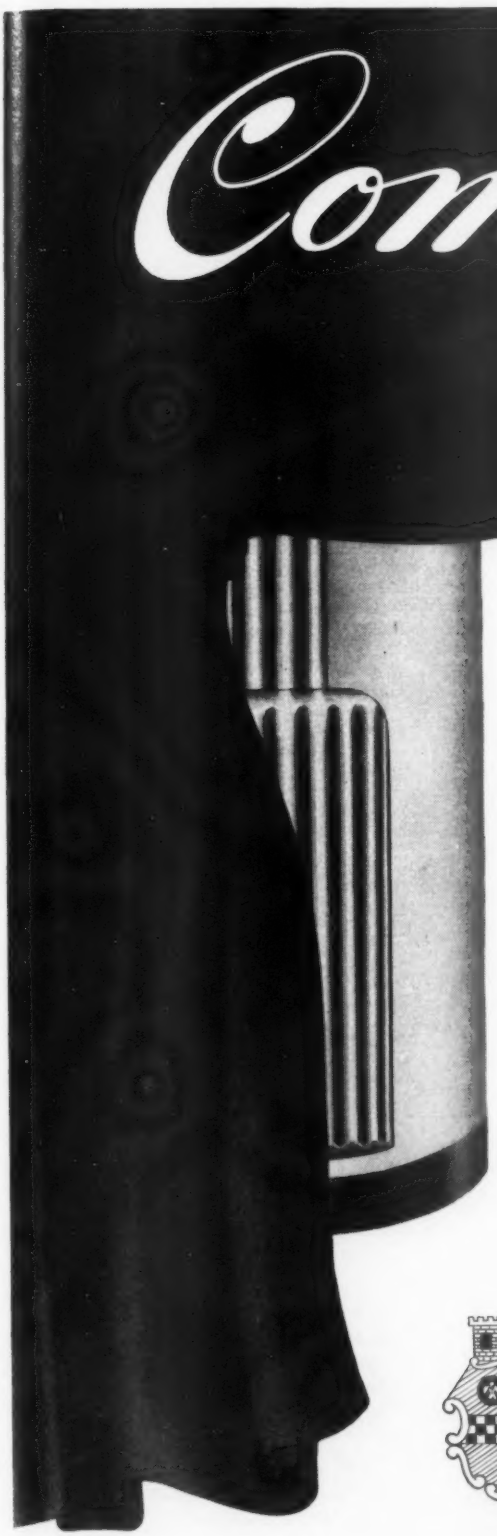
Gild Elects Officers

The Gild of Ancient Supplers held their annual meeting October 24th, at the Engineers Club, New York. The following officers were elected for the coming year: Mayor, Joe A. Mulcare; Senior Warden, Frank C. Packer; Aldermen, Joseph A. Messenger, Wayne R. Smith, E. Carl Sorby; Clerk, John Van Norden; Keeper-of-the-Treasure, Glenn H. Niles.

Harold J. McKay Service Engineer Surface Combustion Corp.

Harold J. McKay has been appointed service engineer in the New York district for Janitrol gas-fired space heating equipment, Surface Combustion Corporation, Toledo, Ohio, manufacturer of the equipment, announces.

Headquarters for Mr. McKay will be with Surface Combustion's New York district offices, Transportation Building, 225 Broadway. The new Janitrol engineer formerly was with the Brooklyn Union Gas Company.



Coming...

THE GREATEST WATER HEATER OF ALL TIME

Pittsburg

Since 1895, exactly fifty years ago, PITTSBURG has maintained one basic principle—to manufacture the finest quality water heaters that engineering skill, pride in craftsmanship and practical research can accomplish.

During the war our production facilities have been utilized by the Allies. Improvement, of course, has consistently continued. As a result, a remarkable state of perfection has now been attained for time-tested water heaters that have won distinction for dependability.

Without a doubt, our new, greater models will dominate the industry. Beautifully designed, skilfully engineered for natural, manufactured, liquid gas and also for electricity, they will be proudly displayed and easily sold from coast to coast.

Wise distributors and dealers are planning to do business with PITTSBURG. Inquire how you can handle our line when it is ready. Anticipate increased sales, more profit, completely satisfied customers.

Pittsburg

WATER HEATER CORPORATION

PITTSBURGH, PENNSYLVANIA

The Industrial Sales Staff

Reorganization and Training at Southern Counties Gas Company

By
Fred A. Herr

AMONG the postwar problems to which gas companies which serve the large industrial areas of the country are now devoting considerable attention is the re-organization of their industrial sales staffs to peacetime requirements and training them in order to retain as much of the industrial-gas war load as possible.

One of the utilities which recognized the importance of training sales personnel to familiarize them with the changes brought on by the war in industrial gas distribution is the Southern Counties Gas Co. This firm, with headquarters in Los Angeles, distributes in a number of counties in Southern California outside the territory served by the Southern California Gas Co. Each, however, is individually and separately operated and has set up its own training program for sales personnel. The activities of the Southern California Gas Co. in the line of training industrial gas salesmen will be treated in a separate article.

Some gas companies have set up special programs for training industrial gas salesmen; other gas utilities have incorporated courses for training members of their industrial gas sales department as part of a general program for sales department personnel.

The program of Southern Counties Gas Co. falls within the latter category. Southern Counties in October, had completed the major phases of a program for retaining former and training new employes of the sales department. In addition to providing a training course for new employes this utility has adopted the practical policy of assuming that former members of the sales department, who were on temporary duty in other departments during the war, can well use a refresher course to bring them up to date.

Preliminary work on a program of training and re-training salesmen was undertaken this year as a result of the formation of the company's postwar sales plan, which was prepared by a committee of district sales agents, according to Clyde H. Potter, manager of appliance sales for the company. The devising of a definite program was turned over in August to Major Harrison Musgrave, who has returned to his post in the firm's personnel department after three years of service with the Army Air Corps.

Major Musgrave's first job was to make an analysis of Southern Counties Gas Company's eight districts to determine the needs and desires for sales training. The survey having indicated the need for training activity, a program was drawn and initiated in October under Major Musgrave's direction. The program embraces three major phases:

1. . . . Indoctrination courses with sales "slants" in which all members of the sales department, inside workers as well as field men, participate.

2. . . . Special courses, with emphasis on sales training, for members of the sales force as a whole.

3. . . . A concentrated course in sales technique, customer approach and sales psychology for personnel in the new business and sales departments.

Clyde H. Potter, supervisor of appliance sales activities, for Southern Counties Gas Co., Los Angeles, who directed the preliminary work for setting up a personnel training program for the company.

Major Harrison Musgrave, recently returned from three years service with the Army Air Force, who devised the training and re-training program which Southern Counties Gas Co. initiated in October for its general sales personnel and industrial gas salesmen.

Sales Slanted Indoctrination Course

The program makes it mandatory upon *all* salesmen to attend the sales classes. Other employes are given less specific sales training than the salesmen. This latter course is designed to provide all employes with sufficient information about the company's policies and practices and merchandise to talk intelligently with a customer on company matters, in or outside the main office.

On the whole, this phase of the training program is intended to make all employees "gas industry conscious," with proper emphasis on the firm that employs them. Southern Counties Gas Co. believes that the knowledge of an employe should not entirely be restricted to the narrow limits of his own particular job; that every employe, no matter how unrelated his job is to sales and merchandising, should be trained to know something about the general functioning of a gas and gas equipment firm.

The overall domestic and sales training courses prepared by Major Musgrave are based to some extent on the sales training program developed by the California Department of Education in collaboration with the 1942 educational committee of the Pacific Coast Gas Association, of which Major Musgrave was a member. For the purposes of the Southern Counties Gas Co. the material of the PCGA course was modified and slanted to fit the localized needs of the company.

The PCGA-State sales training program was prepared by Ferris M. Wakely, staff instructor, Bureau of Business Education, California Department of Education, assisted by the PCGA educational committee. Members of the committee were:

Chairman, O. R. Doerr, Pacific Gas & Electric Co., San Francisco; R. V. Davis, then with Southern California Gas Co., now with A. O. Smith Corp.; Murray Holloway, San Diego Gas & Electric Co.; Harrison Musgrave, Southern Counties Gas Co., Los Angeles; B. W. Reynolds and O. E. Rush, both with Pacific Gas & Electric Co., San Francisco.

As part of the PCGA-State program 14 unit courses were prepared and published in booklet form. These were entitled:

Gas Information Manual for Salesmen
Science and Art of Successful Selling
What Makes People Buy Gas Appliances
The Salesmen and the Sale
When the Customers Call
Prospecting from Inside the Store
Getting Business Outside the Store
Development and Use of a Prospect File
Making an Effective Range Presentation
Preparing to Make an Effective Sales Presentation
Making an Effective Presentation of Automatic Water Heaters
Making an Effective Gas Refrigerator Presentation
Making an Effective Presentation of Gas Heating
Types and Traits of Prospects

PCGA Training Features Used

Features of the PCGA-State sales training program which lent themselves to incorporation in the Southern Counties Gas Co. program were to be introduced in classroom presentations by that firm from October onward. Each of the 14 units of instruction deals with an important phase of salesmanship. The fundamentals of salesmanship are treated in ten units, with the remaining units so organized to meet specific merchandising problems relating to gas ranges, gas waterheaters, refrigerators and gasheating appliances.

Industrial Gas Salesmen Trained

The Southern Counties Gas Co. program includes a special training course for industrial gas salesmen in salesmanship, gas equipment and various phases of sales engineering. The course is designed to provide technical training as well as general sales training that will enable an industrial gas salesman to talk intelligently on any phase of an industrial gas or equipment problem with a customer. Members of the Southern Counties engineering staff are drawn upon to serve as instructors.

The classes are held in the district offices on a twice-monthly schedule, which schedule may be advanced to a weekly basis later on. The overall training program will affect approximately 50% of the present 983 employees of Southern Counties Gas Co. in the general and district offices, and the industrial, new business, service, telephone, meter and adjustment departments who contact the public in either the main office, the branches or the customer's home or office.

The Company has operated with a substantially reduced industrial gas salesforce during the war because the territory served by the firm is not, in the main, heavily industrialized. It distributes some industrial gas in the Los Angeles Harbor District, the Santa Monica Bay District and other points, but, on the whole has an industrial gas load considerably less than the load of Southern California Gas Co.

Southern Counties prewar sales staff included 35 domestic gas salesmen, 12 new construction contact men and eight dealer contact representatives, together with a general supervisory staff in the Los Angeles office. The department is under Norman R. McKee, vice-president in charge of sales and public relations, with Clyde H. Potter serving as head of the appliance sales activities and Charles L. Ferry, industrial engineer, in charge of industrial and commercial sales. The war scattered this force. Many went into the armed services; others were transferred to departments less affected by the war. Only two salesmen were active on industrial plant contact work throughout the war.

McKee Emphasizes Training Needs

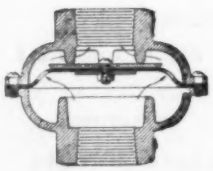
"At present we are hampered by a lack of manpower and will have to train men in all industrial sales work, including new personnel," Mr. McKee said. "We will probably increase our industrial gas salesforce from the two we employed during the war to at least six at an early date."

The industrial gas load of Southern Counties Gas Co. declined very little immediately after the war ended in mid-August, according to Mr. McKee. There was a substantial decline in firm industrial gas, but this loss was partially offset by an increase in surplus industrial gas sales.

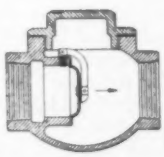
Another aspect of the postwar industrial gas picture in Southern California was commented upon by Charles L. Ferry, industrial engineer for the company.

Mr. Ferry interprets present conditions (early October) and foreseeable future trends as indicating there will be a greater demand for industrial gas in 1946 than the company will be able to supply. He pointed out that a lessening in the demand for gasoline for military purposes has not, and will not, be balanced by increased use of gasoline by automobiles since the termination of rationing. As a result, Mr. Ferry declared, oil producers are forced to reduce petroleum production which inevitably will result in a decrease in the output of natural gas.

Pressure Controls for Gas and Air



HORIZONTAL
DIAPHRAGM
CHECK VALVES
DISC
VERTICAL



NORWALK VALVE COMPANY
35 Railroad Ave. South Norwalk, Conn.

A. B. Cameron Appointed Sales Mgr., Grand Appl. Co.

James Mitchell, President of Grand Home Appliance Company of Cleveland, recently announced the promotion of A. B. Cameron to the position of Sales Manager, effective October 6th, replacing W. L. Marshall, resigned.

Mr. Cameron has been with the Company since July, 1944, as Assistant Sales Manager in charge of product development. He is widely known in the gas range industry, having served for some fifteen years as sales manager and manager of Philgas Division of Phillips Petroleum Company.

Financing Plan for Appliance Sales

DETAILS of a new plan for the financing of household electric and gas appliance sales have been announced by The Chase National Bank of New York. The plan, developed by the Public Utilities Department of the Bank, is regarded as indicative of the increased interest in indirect consumer financing by banks. Under it, the public utility companies, through their own billing and collection departments, and not the Bank, will handle the individual consumer credits.

Known as "The Chase Confirmed Installment Paper Credit," the plan is described as equally adaptable to companies which sell merchandise directly and to companies which cooperate with dealers by helping them to finance their sales of appliances. It is seen as helping the utilities to build postwar load and to coincide with the vast reservoir of pent-up demand of their customers for both replacements and new household appliances.

The Plan provides for the establishment of a credit under which the utility company may receive advances at its election up to a dollar amount specified in the credit. There is no commitment fee for the credit and there is no obligation on the part of the utility company to borrow. The credit specifies a rate of interest, firm for a year, to be paid on the actual funds borrowed. Borrowings under the credit are repayable without penalty at the utility company's option.

The utility company under this credit is required to hold its installment paper unencumbered in its portfolio and to make a monthly report to the Bank, on a form provided, of the total amount of paper owned by it, with a statement that not less than a specified amount comprises qualifying paper, together with a confirming statement of the amount owed to the Bank under the credit. Qualifying installment paper is defined under the credit to mean any evidence of indebtedness (conditional sales contract, lease, etc.) payable in not exceeding forty-eight approximately equal monthly installments, of which not more than two such monthly installments are in arrears.

There is no pledge of installment paper by the utility company and the utility company is obligated to repay (except under termination of the credit) only when it is necessary to reduce the unpaid balance of the advance to the face amount of qualifying installment paper owned by the company. Thus the credit remains in effect from month to month and may continue from year to year until terminated.

No promissory notes are required for advances. Until the credit is terminated, the company may elect to use all or any part of the funds available to it, but upon termination by either party the company has the right to elect the privilege of repaying its remaining balance due the bank in consecutive monthly installments over a period not exceeding three years from such date of termination.

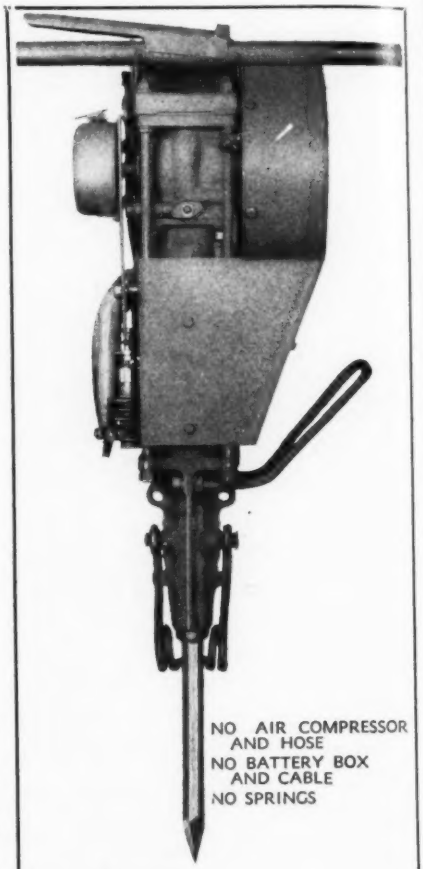
Many utility executives believe that the utility company is the best judge of its customer's credit and that the company's regular billing and collection departments can service the paper most economically. The acquisition of installment paper, whether direct or through dealers, permits the company to exercise reasonable surveillance over the type and quality of appliances offered to its customers, and since the company is primarily interested in maintaining satisfactory customer relationships and in promoting the sale of its services, it may direct its collection efforts with this in view. By reason of its recognized credit standing, the company can obtain the necessary funds to carry this paper on a low cost basis. It can obtain under the Chase Plan not only the cash sales price of the appliance, but the finance surcharge, it need not utilize any of its normal working capital, its ordinary credit line should not be curtailed, and with an adequate surcharge it can obtain funds which should cover in advance all costs of billing and collection and losses arising through repossession.

Col. Tappan Elected Pres. Tappan Stove Co.

Col. Alan P. Tappan, vice-president of the Tappan Stove Company, has been elected president of the firm to succeed Paul R. Tappan, who has been appointed chairman of the executive committee, it was announced recently, following a special meeting of the board of directors.

The directors also announced that A. C. Rhoads, treasurer; R. M. Lamb, former plant superintendent; and W. Richard Tappan, former war products manager, have been named vice-presidents.

It was explained that the administrative organization of the company was revamped to meet the growing problems of the peacetime business following the successful reconversion period.



EASIER—
FASTER—
CHEAPER
with
SYNTRON
100% Self-Contained
Gasoline Hammer
PAVING BREAKERS

BUSTING concrete
CUTTING asphalt
DRILLING rock
DIGGING shale and clay
TAMPING—
and a host of other jobs.

Write for illustrated folder No. 8-45

SYNTRON CO.
920 Lexington Homer City, Pa.

RECENT COURT DECISIONS
Affecting Gas Utilities

Legal Duty to Extend Gas Service

By
Leo T. Parker
Attorney at Law
Cincinnati, Ohio

BROADLY, a gas company can be compelled to extend its mains and service if the expense involved and the financial returns which will result immediately, and in the future, will "reasonably" compensate the company. Therefore, the "necessity" of a gas company to extend its mains and service usually is dependent upon the legal interpretation of the word "reasonably."

First, it is important to know that under *no* circumstances may a company refuse to extend or enlarge service on proof that the *immediate* return on the investment is not adequate to justify the expense. In other words, the Public Service Commission, and higher court, may compel a company to supply gas to inhabitants in a newly and sparsely settled community, if the evidence indicates that the population of the community is *likely* to *rapidly* increase.

For example, in the leading case of New York v. New York Gas Company, 245 U. S. 345, it was disclosed that the Public Service Commission ordered a gas company to extend its distributing system and mains one and one-half miles to a community which was a rapidly growing settlement of 330 houses. The average cost of these homes was $7,500.

An important point brought before the court was that although the length of the extension ordered by the commission was one and one-half miles, the mains of the company were being used to almost their full capacity, and for this reason the estimated cost of making the extension included eight miles of new and enlarged mains.

Officials of the gas company testified that the complete cost of the extension would be approximately $86,000. The engineer for the Public Service Commission estimated the cost at considerably less. On the basis of the gas company's estimate of the total cost of the extension its income would be two and one-fourth per cent per annum. On the basis of the estimate by the Commission the company's income would be four per cent. However, neither of these estimates included an estimate or anticipation of future developments and increase of population and gas service in the community.

The gas company appealed to the Supreme Court of the United States on the grounds that the Commission's order deprived it of its property without due process of law, and denied to it the equal protection of the laws, in violation of the Fourteenth Amendment to the Constitution of the United States.

However, since the evidence proved conclusively that the population of the community soon would increase to afford a fair return on the company's investment, in making the extension, this court upheld the Commission's order, saying:

"Corporations which devote their property to a public use may not pick and choose, serving only the portions of the territory covered by their franchises which are presently profitable for them to serve and restricting the development of the remaining portions by leaving their inhabitants in discomfort without the service which they alone can render. . . ."

Thus, this decision rendered by the Supreme Court of the United States was based solely upon the good *future* prospects of the population of the community soon increasing sufficiently to afford the gas company additional business, whereby its investment in making the extension would be "reasonably" profitable.

On the other hand, see Boulevard Heights Corp. v. Rochester Gas Corp. (1922; N. Y.). In this case the Public Utilities Commission decided that it would be "unreasonable" to order the gas company to extend its service into a new real estate development where there were few customers to be served, and no guarantee that the population would increase to net a reasonable return on the investment. The Commission said:

"The power given the Commission is to order reasonable extensions. . . . The extensions requested would be in the interest of petitioner (real estate owner) and to its advantage in the sale of lots. It is unquestionably the duty of a public service corporation to meet and anticipate the development of the territory in which it exercises its franchise. It would, however, be an unwarranted exercise of the discretionary power vested in the commission to require a public utility to invest its money in the extension of mains where there are no premises to be served. . . ."

Also, in the leading case of Root v. New Britain Company, 99 Atl. 559, the testimony proved that the initial income to be derived from the expenditure of extending gas mains would not net a reasonable income. This higher court held that the extension need not be made unless testimony was given by those who desired the extension which indicated *conclusively* that the population of the new community will soon increase sufficiently to justify the cost of making the extension. This decision was made by the higher court notwithstanding the fact that the lower court upheld the Commission's order to make the extension. The higher court said:

"In the present case the facts appearing upon the record make it quite clear that under existing conditions there would be small prospects of a sufficient income from the extended service to fairly compensate for its cost. . . . Of course, a public service corporation should not be required to give an enlarged service at a considerable cost where the prospects of return for many years to come are so meager as to be out of all proportion to that cost."

And in still another leading decision, Greenwood v. Provind, 108 So. 284, the owner of new subdivision property situated in a municipality filed suit to compel the municipality to extend its mains 700 feet to newly constructed houses in the subdivision.

However, in this case the testimony did not prove that the present

nor the anticipated future return on the investment justified the expenditure of money necessary to install the extension. Therefore, the higher court held the municipality not required to extend its mains, saying:

"Certainly it is the law that a resident of a municipality, living in a remote corner thereof, may not compel the city authorities to extend its mains to his premises regardless of the cost, and expense to the city, merely because the citizen resides within the boundaries of the municipality."

Proof Fails

Quite obviously, if officials of a gas company do not desire to extend mains or service, they should accumulate convincing evidence for presentation to the higher court, that neither present nor future prospective earning, from the extended service, will "reasonably" justify the expense and investment.

For illustration, in Woodhaven Gas Company v. Nixon, 196 N. Y. S. 623. In this case it was shown that a Public Service Commission ordered a gas company to extend its mains. The company appealed to the higher court but failed to introduce testimony which proved that the Commission's order was unreasonable. This court stated law, as follows:

"It was not intended that the court should interfere with the Commission or review their determinations further than is necessary to keep them within the law and protect the constitutional rights of the corporations over which they were given control."

In other words, the duty of a higher court in legal controversies involving extension of gas service is *not* to make new law nor vary established law, but its duty is to see that an order issued by a Public Service Commission is reasonable and that its enforcement will not violate the gas company's legal rights under the United States and State Constitutions.

Impartial Service

It is the legal duty and obligations of all gas companies to serve "impartially" all persons and corporations which apply for and have complied with reasonable rules and arrangements to receive service. Obviously, under this well established rule of law, it is presumed that the one who applies for service is willing to pay the price and abide by reasonable rules and regulations of the corporation which is requested to supply service. Actually serving all gas consumers "impartially" means that no class of consumers will be favored at the expense of others in the same class.

Irrespective of the particular classification of consumers or service, it is certain that "acceptance" by a gas corporation of an application for a service, and compliance on the part of the consumer with all of the company's reasonable rules and regulations, immediately creates an "implied" contract that the company will furnish a sufficient supply and quality of gas for the ordinary uses of the consumer.

Moreover, a gas corporation may be liable in damages for delaying an unreasonable period in commencing service after an application is filed by the prospective consumer and accepted by the gas company.

For illustration, in Columbus v. New York, 917; N. Y. 1st Div., P.U.R. 1918 A 109, the higher court held that a delay of seven weeks in furnishing service, after an application was accepted, was unreasonable.

Also, see Merryman v. Baltimore City, 138 Atl. 324, where the testimony disclosed that the owner of a suburban rental property applied for service and deposited with the corporation the required amount. Furthermore, he complied with all of the corporations rules and regulations. However, the corporation delayed for two years in commencing the service. The property owner sued for damages.

During the trial the Counsel argued that the corporation was not liable because when the application for service was accepted no main line was in close proximity to his property.

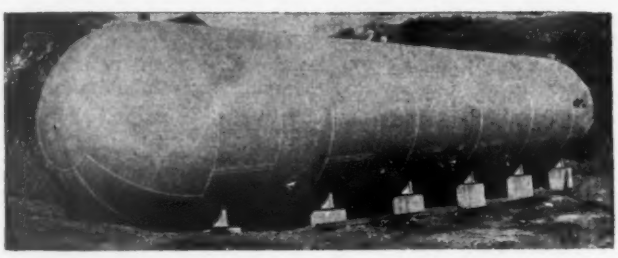
Notwithstanding this argument the higher court indicated that the corporation was liable for unusual delay in commencing service, after "accepting" the application. In other words, the corporation was impliedly obligated to perform its contract although it was impractical to promptly supply the service. This court said:

"The acceptance of this application, we think, created an implied contract under which the city, by implication, agreed not only to supply him such to the reasonable rules and regulations of the appellee, but also to supply the service within a reasonable time thereafter."

Of course, this decision was based upon the implication that a valid contract existed between the gas company and the consumer, by which the former agreed to supply gas service to the consumer. This contract was "implied" when the gas company accepted the consumer's application and the latter performed legal "consideration" by making a deposit and otherwise complying with the corporation's rules.

Valid Contract

In order that a valid contract shall exist between a gas company and consumer the testimony must prove all facts, as follows: The purpose of the contract is lawful; the contract itself is founded upon lawful obligations assumed by the gas company; and the contract was accepted by em-



PIONEERS in the design, fabrication and erection of gas plant equipment we originated the High Pressure Gas Holders.
Our designs of today, either vertical or horizontal type, welded or riveted are outstanding in engineering detail and fabrication. They provide an economic means of storage for service in outlying districts, for off-peak storage or to meet emergency demands.
The products and services we offer include much of the heavy equipment entering into gas making, storage, transmission and distribution.
Ask us about our Gas Holder Inspection Service.

The Stacey Manufacturing Company
CINCINNATI, OHIO
ENGINEERS • FABRICATORS • CONSTRUCTORS
Gas Holders—Gas Plant Equipment—Steel Plate Construction—Gas Holder Inspection Service

ployes authorized by the company to make valid contracts.

Generally speaking, a gas company is liable on all contracts made by a "general" agent whereas it may not be liable on contracts made by a "special" agent, unless the latter is given unusual authority. Special agents are classified as ordinary employes, as clerks, stenographers, bookkeepers, salesmen, and the like. General agents are those who have charge of a business, or a department of a business. Unless the gas company has notified customers, purchasers or consumers that the authority of a general agent is limited, it is liable on contracts made by such general agent.

See Bylan v. Dossin's, 16 N. W. (2d) 704, where the higher court held a corporation liable on a contract made by its sales manager. This court said:

"He (sales manager) evidently was vested with considerable authority. He was sales manager. . . . The testimony indicates that Baushke's authority was not limited. . . ."

Thus, this higher court clearly indicated that the corporation was liable on the contract made by its sales manager *because* his authority was *not* limited.

Conversely, an ordinary employe, or special agent, may be given unusual authority to obligate the gas company. This authority may arise where, for example, the company officials customarily approve contracts made by clerks who accept deposits and agree to supply service.

On the other hand, a consumer of gas cannot recover damages for failure of a gas company to supply gas, if the consumer violated the expressed or *implied* terms of a contract.

See Warfield Natural Gas Company v. Anderson, 249 Ky. 586, 61 S. W. (2nd) 27, where a gas company contracted to provide gas for domestic and residential purposes.

Without authority of the company the consumer extended the gas pipes to an outhouse in order to use gas for a baby chick brooder. When the gas supply failed the consumer sued the company for damages. In explaining that the gas company had not agreed to supply gas for operation of a chicken brooder, the higher court refused to allow the consumer any damages.

The most talked-about feature on any gas range, today. Only the Estate Heatrola Range has it...

Ends mealtime traffic jams at the oven door. Now the roast needn't wait for the cake. Nor the biscuits or pies for the roast. Provides two-oven capacity in a single-oven range. Thousands of delighted women are already using the amazing Bar-B-Kewer. Millions more are reading about it in the leading national magazines . . . will be looking for it at their dealers'.

ESTATE *Heatrola* RANGES

are made by THE ESTATE STOVE COMPANY, Hamilton, Ohio
First with the finest for over 100 years

Abstracted Articles of Current Interest to the Industry

Air Conditioning, Heating and Ventilating

J. Applied Phys. v. 16, pp. 285-295. May, 1945. Rockbuck, J. R.
A Novel Form of Refrigerator.

According to the plan suggested here, refrigeration is achieved by successive compressions and expansions of a gas in a radial type compressor running at very high speed the gas is compressed on the way from the axis to the periphery, being simultaneously cooled by a fluid carried in separate tubing. On the way back to the axis from the periphery the gas is cooled by adiabatic expansion to a degree commensurate with the ratio of expansion. At the axis the gas will be cold enough to perform refrigeration on a third fluid circulated through this part of the mechanism. Thermodynamic calculations are set forth demonstrating the feasibility of the scheme for which exceptionally high theoretical efficiency is claimed.

Engg. v. 160, pp. 59-60, July 20, 1945. Faber, O.
Some heating and some recent installations general information on ventilating.

Heating & Ventilating, v. 42, pp. 68-74, Aug. 1945.
Heating, ventilating, and air conditioning problems in airport design.

Heating & Ventilating, v. 42, pp. 61-65, Aug. 1945.
Skinner, S. B. and others.
Ventilation problems in control of heat and humidity.

Heating & Ventilating, v. 42, pp. 75-76. Aug. 1945.
Paint surface for galvanized sheets.

Heating & Ventilating, v. 42, pp. 78-81. Aug. 1945.
Piping and system control for radiant heating systems.

Chemical

Metallurgia, v. 32, pp. 137-138, July, 1945. Ingram, G.
Application of micro combustion technique to metallurgical analysis.

Liquefied Petroleum Gases.
Oil Weekly 117, 33-35, May 7, 1945. Harts, W. H.
A general review of the history and status of LP-gas.

The Changing Economics of Carbon Black Manufacture.
Chemical Industries 56, pp. 786-788. May, 1945. Miller, B.

(Condensation of one section of Mr. Miller's paper entitled "Chemical Utilization of Natural Gas" which was presented to the Technical and Research Committee of the Natural Gas Department of the A.G.A. as a report.) The recent shortage of carbon black has focused new attention on the economics of manufacture of this important rubber compounding ingredient. Here, the author discusses some of the factors influencing costs in this industry, with special emphasis on raw materials.

Physical Properties of Butanes and Butenes.
Ind. Eng. Chem. 37, 464-468. May, 1945.
Wackher, R. C., Linn, C. B. and Grosse, A. V.

A critical review and correlation of the physical properties of n-butane, isobutane, 1-butene, cis-2-butene, trans-2-butene and isobutylene is supplemented by new experimental determinations. Properties include refractive indices, liquid densities, boiling points, vapor pressures and melting points. Refractive indices, from 10° to 50°C., of these C4 hydrocarbons are reported. Liquid densities of the four butenes and isobutane were determined from 0°C. to as low as 70°C. Vapor pressures from 20 to 800 mm. measured for n-butane and isobutane substantiate the latest literature data.

U. S. Natl. Bur. Stds., JI. Res., v. 35, pp. 125-139. Aug., 1945. Brewer, A. K. and Dibeler, V. H.
Mass spectrometric analysis of hydrocarbon and gas mixtures.

Steel, v. 117, pp. 130, 156-157, Aug. 27, 1945.
Rapid colorimetric analysis.

Iron Age, v. 156, pp. 70-71, 141, 142, Aug. 23, 1945.
Permeable refractories in furnace construction.

American Ceramic Soc., JI., v. 28, pp. 229-256. Sept. 1, 1945. Cook, R. L. and Andrews, A. I.
Chemical durability of porcelain enamels.

Am. Paint J. I., v. 29, pp. 48, 49, 52, 54+. Aug. 27; pp. 54, 56-67, 60-61+, Sept. 3, 1945. Huckle, W. G. and Davidson, H. S.
Post-war corrosion inhibiting primers. References.

Modern Plastics, v. 3, pp. 66-68, 70, 118-123. Aug., 1945. Brother, G. H.
Understanding plastics chemistry.

Brit. Plastics, v. 17, pp. 279-282, July, 1945. Perry, E.
Hot forming laminated phenolic plastics.

Chem. & Engg. News, v. 23, p. 1338, Aug. 10, 1945.
Carbon black. Current and postwar outlook.

Continuous Processing.
Chem. Met. Eng. 52, 101-132, May, 1945.

Never before has there been so much interest in the possibilities for "continuizing" chemical engineering processes that are now operated on batch basis. Perhaps the most important conclusion of this study is that continuous processing is in no sense an overall panacea. Putting a process on a continuous basis is not necessarily the path to greatest efficiency in fact, it may be quite the reverse. Some processes are clear cut for batch, some for continuous processing or some for combination of the two. With others, however, the best choice may be a difficult one to make. Our problem then is to look at some of the determining factors, economic and technical; to see how processes have already "gone continuous"; to examine continuous process types, their peculiarities, their design problems, to gage the trend, we have assembled a group of articles in indi-

vidual industries in which the prospects for continuous processing are assayed. The articles are:

McMullin, R. B. and Weber, M., Jr.
Continuous Flow Processes—an Introduction.
Shreve, R. N.
Historical View of Continuous Process Development.
Crawford, R. M.
Economic Comparison of Batch and Continuous Processing.
Editorial Staff.
How Continuity Affects Unit Operations and Processes.
Bissel, E. S. Problems in Dissolving Reaction and Mixing.
Considine, D. M.
Control of Material Feed Rate.
Yeager, J. R.
Pipeline Digester for Nitrocellulose.
Larian, M. G.
How Batch Unit Processes are Made Continuous.
Bullock, H. L.
Pitfalls in Working Out Continuous Processes.
Olsen, J. F. and Lyons, E. J.
Technical Aspects of Continuous Processes.
Brothman, A., Wollan, G. N. and Feldman, S. M.
Continuous Mixing and Reaction Equipment.
Wilkie, H. F.
Distillery Processes.

Fuels

Chem. & Ind., no. 30, pp. 234, 239, July 28, 1945. Parker, A.
Coal-Science and the **Future.**

A.S.M.E., Trans., v. 67, pp. 417, 424, Aug., 1945. Stilwell, R. F.
Blending coals reflects greater uniformity of product.

Mach. World, v. 118, pp. 63-65, July 20, 1945. Jennings, J.
Consistency in the analysis of combustion products.

Gas Journal, pp. 299-300, Aug. 29, 1945.
Industrial Gas-Future Prospects & Competition.
Among the newer industries in which gas will be supplied in great quantities is radio and radar for manufacture of components; plastics, for heating platens and curing operations; light metals, for heat treating, die-casting, pre-heating and stress reheating.

Heat

Modern Metals, v. 1, pp. 20-21, 23, Aug., 1945. Keller, A. V.
Furnaces and heat treatment for permanent mold magnesium castings.

Engg., v. 160, pp. 127-128, Aug. 17, 1945.
Radiant-heat gas furnace for sparking-plug cores.

Iron Age, v. 156, p. 69, Aug. 16, 1945.
Influence of heat-treatment on damping capacity.

Electronics, v. 18, pp. 134-139, Sept., 1945.
Vibration control for electronic products.

From Ingenioren, no. 81, pp. 169, 171, Dec. 9, 1944. Engrs. Degest, v. 2, pp. 330-331, July, 1945. Blom-Anderson, H.
Temperature distribution and heat flow in bars.

From Technische Rundschau, v. 36, pp. 1-2, no. 30, 1944. Engrs. Degest, v. 2, pp. 359-360, July, 1945. Hintermann, A. E.
Temperature measurement of air and gases at high velocity of flow.

Steel, v. 117, pp. 116-119, 148, 150, Aug. 6, 1945. Birdsall, G. W.
How to get the most from infra-red heating, drying, baking.

Gas Journal (London) Sept. 5, 1945, pp. 339-340.
Infra-Red vs. Correction Heating.
Describes the two methods of heating and their relation to industrial heating problems. Infra-red is satisfactory for thermosetting resin finishes but not for nitro-cellulose base finishes. White finishes are likewise difficult to cure with infra-red. Some concerns have used circulating air, heated to 50°F. above curing temperature, supplementing the infra-red heat source, this cutting time, to cure in half and minimizing undesirable features accruing from use of infra-red.

A Simplified Method of Flue Gas Analysis for Combustion Control.

Gas Times 43, 21, May 12, 1945. Translated from Gas-und Wasserfach 86, 212. 1943.
An apparatus and method covered by a German patent is described for a rapid determination of oxygen and carbon monoxide in flue gases. The gas is freed from CO_2 by sucking the sample through a filter filled with granular soda-lime. The CO_2-free sample is then measured in the burette for the conventional absorption of O_2 and CO. As an example, where producer gas made from coke is used as the heating agent, the oxygen content, in terms of flue gas containing CO_2, is given by the following formula:

$$\text{Oxygen} = \frac{\text{cc. found by analysis} \times 79.2}{\text{100-cc. found by analysis}}$$

For practical work, a curve may be prepared from this formula. A feature of this new apparatus is the employment of a measuring burette which is calibrated so that the respective measuring divisions incorporate the factor employed in the calculation. Thus, the correct percentage is directly read off on the burette after the absorption without reference to tables.

Am. Gas. Assoc. Monthly 27, 235-237, May, 1945. Young W. W.
The Plus and Minus of Induction Heating.
This article deals with heat treating of metals. Induction heating is inefficient, inflexible, and has high maintenance costs as compared to gas fired equipment. Induction heating equipment is also limited in the size of work that can be handled.

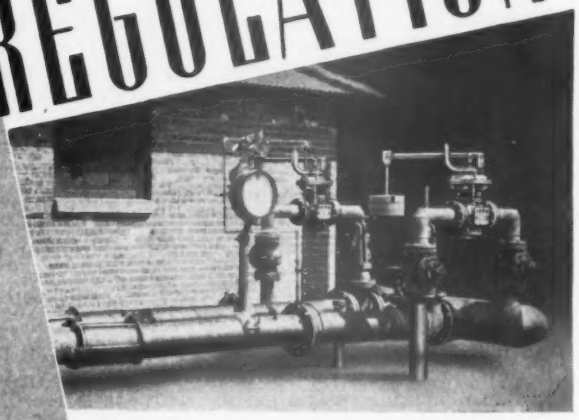
Gas World, Industrial Gas Suppl. 18, 39-42, April 21, 1945. Fitzsimmons, W. A.
Test Data on a Multitubular Type Gas-Fired Infra-Red Oven.
This paper describes and gives details of the performance of an infra-red oven used for experimental work on the drying of metal finishes and shows the results so far obtained. The radiating source consists of sixteen wrought iron tubes 6 ft. by 1-1½ in. bore, fixed about a circle 30 in., in diameter for form a horizontal tunnel 6 ft. long. This tunnel has a 2 in. slot at the top for the conveyer equipment to pass the articles through the unit. A semi-bunsen jet is mounted on one end of each tube to introduce a combustible mixture of air and gas.

Instruments

Sce. Am., v. 173, p. 167, Sept., 1945.
Pipe finder can be used to locate or measure magnetic fields.

Pop. Sci., v. 147, pp. 105-108, 109, Aug., 1945. Sanders, G. V.
Thermostats, our watchdogs of heat and power.

GAS REGULATION



BY REYNOLDS

Reynolds builds a Regulator for every type of Gas Control. Long life, efficient operation, accurate regulation, reasonable cost, low upkeep — all of these are vitally important features built into Reynolds Gas Regulators. Reynolds is proud of its leadership through more than half a century of service. Our Engineering Department will gladly work with you to solve your Gas Control problems. Write.

★

BRANCH OFFICES:
423 Dwight Bldg., Kansas City, Missouri
2nd Unit, Sante Fe Bldg., Dallas, Texas

REPRESENTATIVES:
Eastern Appliance Company
Boston, Massachusetts
Wm. A. Ehlers, No. 268 Park St.
Upper Montclair, New Jersey

Gas Control since 1892

REYNOLDS GAS REGULATOR CO.
ANDERSON, INDIANA, U. S. A.

Instrumentation, v. 1, p. 23, July-Aug., 1945.
Fuel fired galvanizing kettles with new temperature control systems.

Instrumentation—A New Principle in Measurement.
Oil Gas Journal v. 43, pp. 276-281, March 31, 1945. Rosenberger, A. J.
The principle of measuring an unknown force against a known force is utilized in the applications discussed here in the development of various control, indicating and recording instruments applicable to petroleum refining. This article explains the principle and the application to vapor pressure-temperature determination, liquid-level indication at extreme pressures, pressure transmission, flow measurement and other purposes.

Electrical Engineering, p.289, Aug., 1945.
Electronic Control of Furnace Temperatures.
Development of a vacuum-tube thermocouple device characterized by its anticipating nature is devised consisting of two thermal capacity and electric heating element enclosed in glass:

1. To cause heating of thermocouples by radiation.
2. To minimize room-temperature effects.
3. To prevent deterioration of the elements.

Changes in furnace temperatures are anticipated and corrective steps taken to minimize the cyclic swings in temperature characteristic of most furnace controls.

Metals

Engg., v. 160, pp. 77-80, July 27, 1945. Devereux, W. C.
The light-alloy foundry industry and its future.
Sci. Am., v. 173, p. 154, Sept., 1945.
Additives make oil quenching more controllable.
Mining & Met., v. 26, pp. 419-423, Sept., 1945. Gillett, H. W.
A metallurgical inventory. Some of the things that have happened in the last fifteen years.
Foundry, v. 73, pp. 107-108, 210, Sept., 1945. Schwartz, H. A.
Solidification of metals.
Metal Ind., Lond., v. 67, pp. 12-14, 31, Aug., 1945.
The modern high pressure die casting machine.
Foundry, v. 73, pp. 110-111, 162+, Sept., 1945. Cristello, A.
Eliminating troubles in casting bronze and aluminum.
Metals & Alloys, v. 22, pp. 397-402, Aug., 1945. Smith, W. C.
Low melting alloys as production aids.

Welding

Data Sheet No. 156; Power, v. 89, p. 557, Aug., 1945.
90-degree welding elbows.
Sheet Metal Worker, v. 36, p. 46, July, 1945.
Welding shop in war-zone on wheels.
Steel, v. 117, pp. 104-107, 150+, Aug. 27, 1945. Wilkin, D. B.
A symposium on special shapes for welding.

Miscellaneous

Ind. Eng. Chem. v. 37, pp. 412, 455, May, 1945.
Pilot Plant Phases.
These are papers presented at the recent (ninth) symposium on unit processes presented before the Division of Industrial and Engineering Chemists at the 108th meeting of the American Chemical Society. Papers by Barnebey and Vilbrandt relate to the need of the pilot plant stage in chemical process development, how this stage of development should be conducted and what data

should be obtained. Papers by Rushton and by Bissell et al describe mixing and agitation in pilot plants. Several chemical processes, primarily vapor phase oxidation, in small scale equipment are reported by Hass and others. An interesting paper, "Pilot Plant Development of Fluid Catalytic Cracking" by Carlsmith and Johnson is presented as part of the symposium on catalysis at the same meeting. The original development work in up-flow systems is sketched. The authors mention that it was necessary to study many problems such as pressure drop, material flow, heat transfer data, cyclone efficiency, erosion and attrition, etc., but the results of such investigations are not mentioned.

Shreve, R. H. Introduction.
Pilot Plant Phases.
Barnebey, H. L.
Chemical Process Pilot Plants.
Vilbrandt, F. C.
Use and Function of Pilot Plants in Chemical Industries.
Rushton, J. H.
Mixer Performance Data from Pilot Plants.
Bissell, E. S., Miller, F. D. and Everett, H. J.
Agitation in Pilot Plants.

Engg. News-Record, v. 135, 8 p. insert following—. 272, Aug. 30, 1945.
The atom, new source of energy.

Electronic Ind., v. 4, p. 108, 184, Sept., 1945.
Union Gas Systems of Independence, Kan.
Installed radiotelephone for maintaining vigilance over failures and breakdowns of pipe lines.

The Pipefitter's and Pipe Welder's Handbook. Bruce Publishing Co., Milwaukee, 1944. Frankland, T. W.
The handbook contains basic information in the form of tables, sketches and calculations to enable the pipe fitter and welder to solve some of the daily problems encountered. For the engineer who is learning to fit pipe there is much to be gained from this book. The size of the book is adapted to fit into the average work clothes pocket.

Research in the Gas Industry: Complete Gasification, Gas Times, (England) v. 43, pp. 22-24, May 12, 1945. Andrews, R. S.
Two methods of gas enrichment are discussed with the intention of making the British gas industry independent of paraffin base petroleum which can be used to much better advantage in cracking. The first method involves the gasification of continuous vertical retort tar, of which over 20 million gallons are available annually in Britain. Because of the paraffinold nature of this tar, a large gas yield is obtained when subjected to "cracking" at atmospheric pressure and suitable temperature. Pilot plant results obtained in tar gasification are subsequently shown in tables. The second method consists in the enrichment of blue gas with methane produced by synthesis from the constituents of the blue gas itself. This process developed over three years of research, involves three stages;

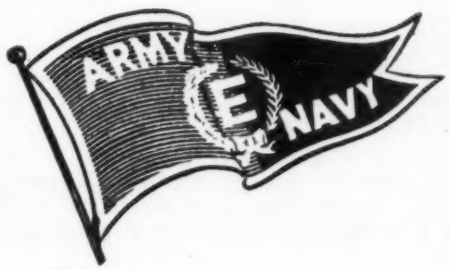
(1) simultaneous removal of organic sulfur by steam and catalyst to increase the CO/H_2 ratio to ½
(2) synthesis of methane at 525°F. with a nickel alumina catalyst at atmospheric pressure and space velocity of 800
(3) removal of CO_2 down to 3 per cent by washing with potassium carbonate. During this research the small laboratory model operated continuously for 1500 hours, producing a gas of 916 Btu after the removal of CO_2, in the laboratories of the Metropolitan Gas Company. The British Gas Re-

TO THE FUTURE!

Keeping pace with a forward-looking industry, and mindful of new problems ahead, G.P.M. purification engineers are continuing their constant improvement of a product that has long set a standard in purification. Gas engineers, as in the past, will turn to G.P.M. Iron Hydroxide to meet the purification demands created by the progress in the industry.

GPM
IRON HYDROXIDE
GAS PURIFYING MATERIALS CO., INC.
LONG ISLAND CITY 2, NEW YORK

GAS METERS



RADAR

LAMBERT METER CO.
PLAINFIELD, N. J.

search Board has regarded this problem to be of sufficient importance as to become one of their major items for continued research on pilot plant scale.

The Effect of Supercompressibility Of Natural Gas Upon Compressor Performance.

Calif. Oil World. v. 38, pp. 16-28, March, 1945.
Natl. Petroleum News. v. 37, R-544-555, July 4, 1945.

Ideally, the specific volume of a gas can be computed as follows: $V = rT/P$ where r is the gas constant per unit of mass, T is the absolute temperature and P is the absolute pressure. Actually this equation is generally true only for moderate temperatures and low pressures. One may write $V = ZrT/P$ where Z is a correction factor called the "compressibility factor." Z may be correlated for a number of gases in terms of reduced temperatures and pressures where a "reduced" quantity is the value of a variable divided by its value at the critical point. Sometimes it is necessary to divide by a slightly different quantity known as the pseudo-critical value in order to get the desired correlation. With this as a starting point, the author shows the effect of including Z in calculations relating to compressor performance, specifically the volumetric efficiency, capacity and brake horsepower.

Modern Methods of Purifying Coal Gas to Town Gas Standard.

Gas World (England) 122, pp. 41-46, Coking Section, March 3, 1945. Thompson, R. J. S.

The article presents a detailed review of existing and potential methods for the purification of gas to town gas standards. In general, coal gas having an average hydrogen sulfide content of 500 grains per 100 cu. ft. is considered and must be purified before distribution by reduction of hydrogen sulfide concentration to less than 0.1 grain per 100 cu. ft. Box purification employing iron oxide or lime efficiency meets this requirement but other sulfur compounds present are not removed. The fact that box purification may permit high total sulfur concentration even though hydrogen sulfide is effectively removed has led to other methods of gas purification. Liquid washing systems present many problems: absorption selectivity, regeneration, sulfur disposal, efficient and continuous operation, etc. Because of these difficulties and economic feasability, no commercial liquid process is on the market in the United States at this time. However, three reasonably successful processes of this type are in use abroad.

(1) Thylox process—Employs an alkaline arsenious oxide absorbent solution to obtain 99 per cent removal. Regeneration is accomplished by aeration and free sulfur recovered as a suspension. Gas purified by this method would not come up to town gas standards.
(2) Girbotol process—a 50 per cent solution of monoethanolamine is used for absorption and this is regenerated by heat. The absorbent does absorb carbon dioxide from the gas and desired efficiency for sulfur removal is not achieved at normal pressures.
(3) Alkazid process—An aqueous solution.

Annual Report of Research and Technologic Work on Coal.

Bureau Mines Information Circular 7322, May, 1945. Fieldner, A. C., Fisher, P. L. and Brewer, R. E.

Included in this report are summaries of work done on the utilization of coal, carbonization and gasification, and liquefaction. Development work on the Fischer-Tropsch process, synthesis of liquid fuels by hydrogenation of carbon monoxide and catalysts for primary liquefaction of coal by hydrogenation are some of the topics discussed.

Elec. World, v. 124, pp. 108-109, Aug., 1945. Hill, J. C.

An operating executive looks at utility vehicles.

Refrig. Engg., v. 50, pp. 113-119, 158-160, Aug., 1945. Dely, J. G.

Refrigeration in water gas synthetic ammonia plants.

Econometrica, v. 13, pp. 225-244, July, 1945. Benson C. G. and Kimball, B. F.

Mortality characteristics based upon location life table and reuse ratios for physical property.

Future Prospects and Competition.

Gas Times 43 (England) 6-9. Industrial Gas, April 21, 1945. Randall, L. F.

A survey of the pre-war status in industry shows that about 2 per cent of the heat was supplied by gas. The future expansion of the industry will depend upon the price of gas and upon the efficiency of the industrial sales organization. With the development of new industries and modernization of the old, there will be many new fields open to the industry, which are discussed.

Protecting Research Profits.

Chemical Industries 56, 581-3, April, 1945. Toulmin, H. A., Jr.

American industry has thrived under the encouragement of the patent system. The complexity of modern inventions has inevitably been reflected in the complexity of patent procedure, and the system is often attacked by those who are unfamiilar with its intricate workings. Here the author, a well known patent lawyer, makes more understandable those policies which have lent much to prosperity and stability of our industrial structure.

Acknowledgement is made herewith of material obtained from the Institute of Gas Technology.—Ed.

CRUSE-KEMPER COMPANY
AMBLER, PENNA.
GAS HOLDERS
Low Pressure High Pressure Inspection
Purifiers Tanks Flues
Over 40 Years of Sound
Steel Plate Construction

How to weld 170% faster with "FLEETWELD"

The true worth of "Fleetweld" is found in its ability to produce *better welds, faster, at lower cost* . . . World-wide contacts, made by skilled Lincoln engineers, provide a constant flow of suggestions for continuous improvement of "Fleetweld" . . . And, Lincoln engineers are continually developing better ways to use these electrodes to give you faster welding. For example:

The new "Fleet-Welding" technique, in 5/8" butt welds, is 170% faster and costs 59% less than the conventional technique. The illustration below shows this technique. Full details and procedures in handy, pocket-size Bul. 444, free on request.

THE LINCOLN ELECTRIC COMPANY • CLEVELAND 1, OHIO

America's greatest natural **recourse**

ARC WELDING

Gas Appliance Cooking School

Store Location Selected By Pacific Gas & Electric Co.

SPONSORED by the Home Economics Department of the Pacific Gas and Electric Co., the first store-promotion cooking school in the San Francisco Bay area was held in the Emporium Department Store, San Francisco, September 10 to 15.

That the war-caused shortages of gas appliances has developed in West Coast women a greater interest than ever in home making and its appurtenances in the form of labor-saving gas appliances was demonstrated by the attendance at the cooking school.

The five-day attendance was estimated at 1,500, exceeding all pre-war figures of the drawing power of similar events in the same department. The average daily attendance was reported by PG&E as 300 persons, predominantly women, but sprinkled with a few men here and there. That attendance greatly exceeded expectations was evidenced by the fact that at the opening session provision for 100 chairs had been made.

The gas cooking school was held in an improvised kitchen installed in the third floor appliance department of the Emporium. Styled "Missouri Lane," the event was widely publicized in the Bay Area by means of half-page display advertisements in the San Francisco daily newspapers on September 10, 11 and 12, a double page spread in the San Francisco *Shopping News* on September 10, and a full page in that publication on the 13th.

Cleo Filsinger, home economist of the Pacific Gas & Electric Co., director of the cooking school, acted as master of ceremonies and introduced the various specialists, speakers and demonstrators who appeared in the

Shown here is the improvised kitchen setting installed in the appliance department of the Emporium, San Francisco Department Store, for the gas cooking school.

On platform (wearing white) are (left to right) Elena Zelayeta, blind chef and authoress; Cleo Filsinger, director, Home Economic Division, PG&E; and Charlotte Sloan, representing Jas. Graham Mfg. Co., one of whose Wedgewood gas ranges was used in the demonstrations.

SUPERIOR GAS METERS

For Sound Values and Continuous Operating Economy

Meters for Domestic and Industrial Use. All Sizes 5B to 60C.
Wet Test and Demonstration Meters — Diaphragms —
Service Cleaners — Provers — Meter Repairs

Write for details and quotations

SUPERIOR METER COMPANY, INC.

167 41st Street Brooklyn, N. Y.

course of the five day program.

Among those making appearances were Anne Martin, representing Roma Wine Co. who presented a talk on "Adventures in Dining"; Gladys Mason of the Sperry Division, General Mills, who described "Variety Breads for Interesting Meals"; Elena Zelayeta, blind chef and author, who demonstrated Fiesta Meals and manipulated the gas range with the proficiency of most women who can see.

One of the timeliest discussions, in view of the fact that meat rationing was still one of the problems with which housewives had to contend at the time the cooking school was held, was a daily talk by Mary Lou Armstrong of the National Livestock and Meat Board on "Tender Ways With Meat."

Mrs. Filsinger of PG&E and Charlotte Sloan, representing the Jas. Graham Manufacturing Co. makers of the Wedgewood range used in the cooking demonstrations, presented a demonstration of the water bath method of home canning. Low temperature baking and flavor and vitamin saving simmer cooking by use of a gas range was demonstrated daily by Charlotte Sloan.

The appliance department of the Emporium in which the cooking school was held was decorated in a fair carnival motif. Colorful posters of the Fair Barker were placed in store windows, aisles and elevators to guide visitors to the school. Red and white pennants brightened the appliance department and a red and white color scheme was used in covers for the appliance tables, lamp shades and merchandise markers.

A broad variety of household appliances and products was exhibited and demonstrated, some of the demonstrations dealing with sample articles not yet ready for the retail market.

The high degree of audience interest was commented upon by the management of the Emporium with satisfaction, the only flaw in the success of the affair being the complete sellout of items that are still available only in limited supply. An interesting sidelight was the complete sellout of a cook book authored by Elena Zelayeta, blind chef.

Conclusions reached by the store management, appliance manufacturers and distributors and the gas company was that this initial venture in store promotion of gas appliances had proved that the war has not destroyed women's interest in the tools of home making, and that, if anything, their interest seems to have been wetted to a keener point than ever.

J. C. Gilbert on Directorate Southern Counties Gas Co.

J. C. Gilbert, district manager at Santa Monica, Calif., for the Southern Counties Gas Co., has been elected to the company's board of directors, succeeding to the position vacated by the death of Ferdinand R. Bain, chairman of the board and a Southern Counties director since 1911.

Mr. Gilbert has been senior district manager for the company and has served as a district manager since 1920. F. S. Wade, president, pointed out that as representative of the district managers' groups, Mr. Gilbert will be able to contribute an important additional viewpoint to the Board of Directors' meetings.

Mr. Gilbert's first association with the gas industry was in 1912 in which year he joined the Central Indiana Gas Co., Muncie, Indiana, and served as assistant to the manager. Coming to California in 1918, he became a member of the general office staff in Los Angeles for Southern Counties Gas Co. Two years later he was transferred to Santa Monica as assistant superintendent and a short time later was made district manager there.

RECONVERSION!

. . . but there's a "catch" in it! Availability of materials will govern production of PAYNE Furnaces

Relaxation of Government controls is one thing; obtaining necessary materials and equipment, another. ★ We wish we could give a positive answer to every inquiry about deliveries, and fill every order promptly and completely. However, as we struggle to catch up with our backlog, there are bound to be some disappointments. We can only say this: As fast as materials and transportation facilities are obtainable, PAYNE Furnaces will roll from assembly lines to dealers. ★ We shall carefully allocate production among our distributors and dealers. Thank you for your patience!

PAYNE FURNACE COMPANY
(One of the DRESSER Industries)
BEVERLY HILLS, CALIFORNIA

WORTH WAITING FOR
PAYNE Floor Furnaces; "Zoneair", "Sentry" and "Spacesaver" Forced Air units; Gravity Furnaces; other PAYNE products.

PAYNE ZONE-CONDITIONING—Successor to old-fashioned central heating. Request FREE booklet.

PAYNEHEAT
OVER 30 YEARS OF LEADERSHIP

GAS FUEL HAS EVERYTHING

Operating Division Meeting of New England Gas Association

ON October 17th the New England Gas Association held a one-day meeting of the Operating Division in Boston. Approximately 150 operating engineers from New England were in attendance.

Roy E. Wright, Chairman of the NEGA Appliance Study Committee reviewed the activities of his committee during the past three years, which covered possible appliance construction improvements, servicing policies and costs.

E. G. Rhodes, Assistant Engineer, New Britain Gas Light Co. presented the experience of his company with water-cooled welded jambs and lintels for generator clinker doors.

C. A. Schlegel, Sales Manager, United Engineers & Constructors, Inc., Phila., Pa., presented a paper titled "Development in Carburetted Water Gas Apparatus," which is printed in this issue of the *Journal*.

The afternoon session was an LPG symposium, David S. Reynolds, President, New England Gas Assn., and Vice President Boston Consolidated Gas Co. talked about the new Everett propane-butane-air gas mixing plant which will be the largest unit of its kind in New England, having a capacity of 10 million cubic feet per day.

"Relation of LP Gas to Our Industry" was the subject of a paper by Francis E. Drake, Utilities Consultant, Reading, Pa. Mr. Drake outlined the progress made in LP gas production and utilization during the past several years and also the results which have been obtained by some operators in augmentation and substitution.

H. K. Seeley, General Superintendent, Gas Operations, Central New York, Power Corp., Syracuse, N. Y., described the complete operation of converting a coal gas plant to propane, air gas. His paper will be found elsewhere in this issue of the *Journal*.

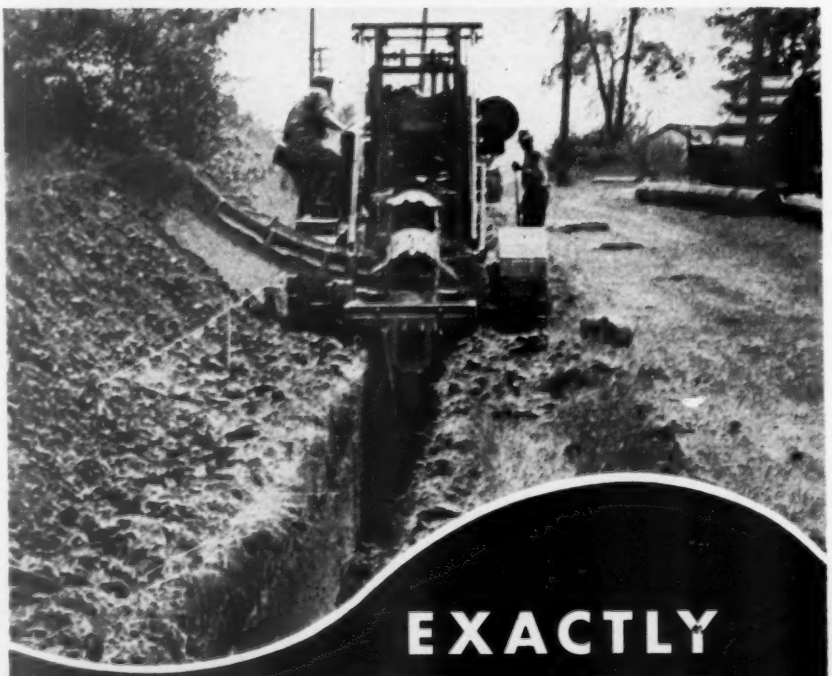
Kurt Richter, Assistant Engineer, The Connecticut Light & Power Co., Waterbury, Conn., described the method of handling L.P. gases in the plant. Theory and mechanism of their pyrolysis and the methods and operating procedures of the reforming process itself. Results, gas analysis and data pertaining to operations.

Appliance Servicing Conference

On Oct. 16th, the NEGA held a one day meeting, devoted entirely to the subject of appliance servicing. Short papers were presented on Burkay Water Heating Servicing Problems, Instantaneous Water Heater Servicing, Maintaining Heavy-Duty Cooking Equipment, Central Heating Maintenance, Spraying and Painting, Advantages and Disadvantages of Leaving Pilots on During the Summer, Electrical Control Systems, Thermostats, Motors, Relays, also Advantages and Disadvantages of Unit Heaters in Commercial Installations and Using Unit Heater Fans for Summer Cooling.

All of the subjects were discussed from the floor and all were off the record.

"CLEVELANDS"



EXACTLY MEET YOUR TRENCHING REQUIREMENTS

for Oil—Gas—Gasoline—Sewer and Water Lines—Drainage —Telephone and Telegraph Conduit—Building Foundations

THE CLEVELAND TRENCHER COMPANY
20100 ST. CLAIR AVE. • CLEVELAND, OHIO
CLEVELANDS Save More . . . Because They Do More

Annual Meeting Amer. Gas Assn.

(Continued from page 18)

Hartson, Elected Chairman, Committee of National Advertising

D. P. Hartson, vice-president, Equitable Gas Company, Pittsburgh, Pa., has been elected chairman of the Committee on National Advertising of the American Gas Association. This committee exercises general supervision over the gas industry's national advertising program which has been in continuous operation for ten years. The advertising budget for the current year calls for an expenditure of $857,000.

Mr. Hartson has served several years as a member of the committee representing gas companies situated in Western Pennsylvania, Ohio and West Virginia.

In his new appointment as chairman, Mr. Hartson fills the position left vacant by H. Carl Wolf who became managing director of the Association, October 1st.

R. G. Taber, president of the Atlanta Gas Light Co., Atlanta, Ga., has been elected a member of the Committee on National Advertising to represent participating gas companies in North Carolina, South Carolina, Georgia, Florida, Tennessee, Alabama and Mississippi. These companies were formerly represented on the Committee by Mr. Wolf.

AWARDS

McCarter Medal

McCarter Medals and Certificates of Assistance were awarded to five members of the Washington Gas Light Company, Washington, D. C. Recipients of the awards were: Ralph Alexander Talbert; Edward Joseph Hayden; Patrick E. Magner; Elmer R. Mangum, Sr., and Maurice B. McQuade.

In 1923, Thomas N. McCarter, who resigned last week as chairman of the board of The Public Service Company of New Jersey, after 42 years with the corporation, established a McCarter Medal Award of the American Gas Association to encourage the resuscitation of persons overcome by gas through use of the Schaefer prone pressure method. In the intervening years, 778 McCarter medals and nearly 300 Certificates of Assistance have been awarded, with 48 award winners receiving bars as additional testimonials.

Charles A. Munroe

The highest honor bestowed by the American Gas Association was conferred on J. French Robinson, president, The East Ohio Gas Company, Cleveland, and retiring president of the A.G.A. Mr. Robinson received the Charles A. Munroe Award for having made the most outstanding recent contribution toward the advancement of the gas industry.

The award was made to Mr. Robinson in recognition of his wartime leadership of the gas industry, his personal contributions to its effectiveness in meeting the demands of wartime production, and his work of coordinating the gas industry with wartime fuel activities of the Government.

Mr. Robinson has taken a significant part in representing the gas industry before governmental agencies; has served ably on various war industry committees. He was coordinator for Natural Gas on the Petroleum Industry War Council and is a member of the industry Steering Committee preparing representations for the Natural Gas Industry before current Federal Power Commission hearings.

The committee selecting Mr. Robinson for the award which consists of a certificate and monetary award, gave honorable mention to Ernest R. Acker, president, Central Hudson Gas & Electric Corporation, who received the 1943 award, for his continued contributions to the advancement of the gas industry in the instigation and administration of the A.G.A. Promotion and Research Program. Honorable mention also is given to Alexander M. Beebee, vice-president, Rochester Gas & Electric Corporation, for his splendid achievement as chairman of the A.G.A. Post-War Planning Committee in pioneering this project and assembling an efficient organization to complete the reports which received such deservedly wide attention.

Dr. C. W. Wilson and Dr. E. W. Guernsey of Baltimore

Million Man Hour

The Million Man Hour Award was awarded to the Equitable Gas Company of Pittsburgh, Pa., whose production and transportation departments, worked 903 calendar days for a total of 1,029,000 man hours without a disabling injury accident—a remarkable record.

This Safety Merit Award is made each year by the Executive Board of the Association on recommendation of the Accident Prevention Committee of the American Gas Association. Mr. Dorr P. Hartson, vice-president of the company, received the award on behalf of the Equitable Gas Company.

Paul Revere Silver Bowl

For the first time, past presidents of the Association who were present, received awards.

Left to right: D. P. Hartson, Pittsburgh, Pa.; H. Carl Wolf, New York; L. E. Knowlton, Providence, R. I.; Dr. A. C. Fieldner, U.S. Bureau of Mines, R. Van Vliet, Stapleton, S. I. N. Y.; T. L. Robey, Washington, D. C.

Flora G. Dowler

Julia Hunter

Vivian Marshall

Margaret Holloway

In appreciation of past services to the Association during their respective terms of office as presidents, each was presented with a Paul Revere Silver Bowl by J. French Robinson. The presentation of the bowl to Mr. Robinson, retiring president, was made by Everett J. Boothby, president elect.

The following past presidents were present. John B. Klumpp, 1924, Ralph W. Gallagher, 1932, Percy S. Young, 1935, N. C. McGowen, 1938, Walter C. Beckjord, 1940, Maj. T. H. Strickler, 1941, George S. Hawley, 1942, Arthur F. Bridge, 1943, Ernest R. Acker, 1944, and J. French Robinson, 1945.

McCall's Magazine Awards

Four Home Service Directors received the 1944-45 McCall's Magazine Awards for outstanding contributions to the advancement of better living in the home, through the promotion of gas appliances and equipment.

Miss Flora G. Dowler, Cumberland & Allegheny Gas Co., Cumberland, Md., was awarded first prize consisting of $150 in War Bonds and stamps; while the Company received an engraved plaque which remains in its possession for one year. Second prize of $100 in War Bonds and stamps to Miss Julia Hunter, Lone Star Gas Co., Dallas, Texas, third prize of $75.00 in War Bonds and Stamps to Miss Vivian Marshall, New Orleans Public Service Co., New Orleans, La., and $50.00 in War Bonds and stamps to Miss Margaret Holloway, Consolidated Gas, Elec. Light & Power Co., Baltimore, Md.

Awards were made on papers of 2000 words or less submitted by entrants, covering the aims of the home service department, the training personnel and sales people, community activities engaged in, and increase in scope of home service activities particularly in relation to the war.

Blue Flame Council of Dallas Hold Luncheon Meetings To Promote Sales

The Blue Flame Merchandising Council of Dallas, made up of gas appliance manufacturers' representatives and sales executives of gas utility companies, was organized July 1, 1945. This new Council was organized for the exchange of ideas in connection with the merchandising of gas appliances, to collect and disseminate information of benefit to its members regarding various phases of gas appliance merchandising, to promote acquaintance, good fellowship and closer business relationship.

It is believed that this is the first group of this type in the United States to have been organized in anticipation of renewed merchandising activities. Undoubtedly, interested parties elsewhere in the country would find it advantageous to form similar groups.

Officers of the new Council include Fred D. Bradley, Southern Union Gas Company, president; Carl L. Trevitt, Lone Star Gas Company, vice president; James B. Reese, Lone Star Gas Company, secretary-treasurer. Directors are J. M. Lynn, Lone Star Gas Company; Seward Abbott, Servel, Inc.; Jack Little, Detroit Michigan Stove Company; J. C. Mansfield, George D. Roper Corporation.

Luncheon meetings are held on the first and third Mondays of each month. Programs consist of round table discussions regarding the various phases of utility merchandising. Subjects discussed thus far:—Dealer Cooperation From the Utility Company's Viewpoint, Carl Trevitt; From the Dealer's Viewpoint, As Observed by a Manufacturer's Representative, J. H. Schmidt; Will We Be Ready for Competition, J. M. Lynn; Combating Competition—Post War, Seward Abbott; Gas Utility Customer Surveys, James B. Reese.

Charter members of the group, in addition to the officers and directors heretofore named, are J. P. Ashcraft, Minneapolis - Honeywell Regulator Company; Andy Bellew, Jas. B. Clow & Sons; A. D. Colby, Eastman Products Company; Leon Conner, Athens Stove Works; W. A. Catlett, Surface Combustion Company; W. W. Hall, General Gas Light Company; C. B. Hasford, Eastman Products Company; Joe Kendall, Estate Stove Company; Victor Kneece, General Controls Company; Jack Lynch, Servel, Inc.; J. J. Marcus, Cribben & Sexton Company; C. K. Patton, Ward Heater Company; J. H. Schmidt, Peerless Mfg. Corporation; C. B. Seidenglanz, Cleveland Heater Company; Roy M. Liedstrand, Dearborn Stove Company.

Fred D. Bradley

Committee on Natural Gas Reserves Announced

R. H. Hargrove, Chairman of the Natural Gas Department of the American Gas Association, announces the formation of a committee to be known as the "Committee on Natural Gas Reserves." The function of this committee will be to prepare and maintain estimates of the nation's reserves of natural gas and will, it is predicted, provide a source of dependable information on this subject which will be of great benefit not only to the industry itself, but to the many related undertakings as well as to the consuming public and other interested persons.

It is contemplated that the work of this committee will be closely correlated with that of the Committee on Oil Reserves of the American Petroleum Institute (which has for many years been estimating the oil reserves of the nation) in order that there may be an interchange of information and findings by the two committees.

The committee will be composed of the following members, who, it will be noted, will constitute representation from all of the gas producing sections of the nation:

N. C. McGowen, chairman, Shreveport, La., United Gas Corporation.

Lyon F. Terry, vice chairman, New York City, The Chase National Bank.

R. M. Bauer, Los Angeles, Calif., Southern California Gas Company.

R. O. Garrett, Shreveport, La., Arkansas Louisiana Gas Company.

Charles C. Hoffman, Oklahoma City, Okla., Cities Service Gas Company.

W. T. Nightingale, Rock Springs, Wyo., Mountain Fuel Supply Company.

Perry Olcott, Houston, Texas, Humble Oil and Refining Company.

E. E. Roth, Charleston, W. Va., United Fuel Gas Company.

Paul C. White, New York City, Southwest Gas Producing Company.

In addition to the above named industry members, Mr. F. S. Lott, Assistant Chief, Petroleum Economics Division of the Bureau of Mines, will serve as a member of the committee for the purpose of coordinating the reserve estimates of the committee with the Bureau of Mines gas production statistics.

Mr. Walter E. Caine, Chief Statistician of the American Gas Association will serve as Secretary of the committee.

C. F. Cushing Appointed V.P. of Payne Furnace Company

Elroy Payne, president of Payne Furnace Co., Beverly Hills, California—one of the Dresser Industries—announced the appointment of Charles F. Cushing, as vice president and assistant general manager.

Cushing leaves the post of distribution manager of Bryant Heater Co., another Dresser member company, with whom he has been associated since 1935, to assume his duties at Payne on November 1st.

Surface Combustion Appointments

Thomas H. Langan has joined the Janitrol sales department of Surface Combustion Corp., Toledo, O., the company announces. He is assistant to the manager of the Cleveland district office.

Following his honorable discharge as a technical sergeant in the Army, Mr. Langan became associated with the Metropolitan Edison Co., Easton, Pa., in the sales of gas-fired heating equipment. He comes to Cleveland from that position to assist in marketing of Surface Combustion gas-fired domestic, commercial and factory space heating equipment and also Surface Combustion industrial furnaces.

Mark H. Cummings has been appointed sales representative in the South Bend, Indiana territory.

Formerly in the space heating sales department of the Northern Indiana Public Service Company at South Bend, Mr. Cummings has his residence in that city.

Applications for New Pipe Line Construction

The Federal Power Commission has postponed from October 15 to January 15, 1946, the hearing on the Metropolitan Eastern Corporation's application for a certificate of public convenience and necessity authorizing it to construct and operate approximately 825 miles of 18-inch natural gas transmission pipeline extending northeasterly from the Carthage Field, Panola County, Texas, to a point near Hamilton, Ohio.

The proposed pipeline, with appurtenant facilities, including five compressor stations having an aggregate of 25,600 horsepower, and a dehydration plant, is estimated to cost $23,500,000. The project would have an initial daily capacity of 140 million cubic feet of gas, intended to be sold to distributing companies.

The Federal Power Commission has received an application filed by Michigan-Wisconsin Pipe Line Company, newly organized subsidiary of American Light & Traction Company for authorization to construct and operate a natural gas pipeline of ultimate 320,000 Mcf daily capacity from the Hugoton gas field, Texas, to markets in Missouri, Iowa, Illinois, Wisconsin, Indiana, and Michigan with an ultimate terminus near Detroit. Estimated cost of the initial construction for the project is $49,000,000, with additional construction during the first four years of operation bringing the total estimated cost to $70,000,000.

If approved, the main line as finally completed will be about 1,216 miles in length, the initial construction being limited to about 1,076 miles of the total length. Of the total, 816 miles would be of 26-inch and the remainder of 22-inch pipe. The project further includes the construction of necessary lateral lines, and one 900-pound compressor station in Hansford County. Additional pumping stations would be installed from year to year as required by load growth, the application states. Initial capacity of the line out of the Hugoton-Panhandle fields would be 150,000 Mcf per day. Through the use of the Austin and other gas storage fields in Michigan, now owned by American Light & Traction's subsidiary, Michigan Consolidated Gas Company, a maximum day's requirements in excess of 630,000 Mcf of gas could be supplied by the fully completed system, the application says. It adds that Michigan Consolidated proposes to construct about 140 miles of 26-inch line connecting the Austin field with the Detroit area, as well as a compressor station at the Austin field.

It is planned, the application states, to begin construction about March 1, 1946, and to complete the initial installation on or before October 31, 1947.

News of the Gas Industry

Natural Gas for Milwaukee

Paving the way for the introduction of natural gas by October, 1947, the Milwaukee Gas Light Co., it is reported, has won civic approval of its plan in 36 of the 39 localities in which it operates, with similar action still pending in the three remaining communities of West Allis, Germantown and the Town of Lake.

Testifying in the first of a series of hearings before the Federal Power Commission at Kansas City to get a complete picture of the nation's natural gas resources, Dr. E. de Golyer, Houston, Tex., geologist, estimated the proved natural gas reserves in the United States to be in excess of 140 trillion cubic feet. He was a witness for the natural gas industry committee, as noted in the October issue of the *Journal*.

Seven city officials of Milwaukee attended the hearing. The possibility arose that the Commission may extend its hearings to Wisconsin with Milwaukee or Madison on the schedule. The Milwaukee *Journal* and the Racine *Journal-Times* have gone on record editorially favoring the introduction of natural gas.

Criticizing the legislature's record on natural gas legislation, a spokesman of the Milwaukee County Federation of Women's Clubs had the following to say: "I disagree with the legislature's point of view in not favoring natural gas. There is no sound reason for not making natural gas easily available in Wisconsin. Many women feel that way."

Laboratories' Engineers Promoted

Promotion of two veteran engineers at the American Gas Association Testing Laboratories who will head enlarged and separately established testing and inspection departments has been announced by R. M. Conner, Director.

Russell V. Myer, until recently superintendent of war production and former test floor supervisor was named Chief Engineer of the Testing Department and Ralph E. Cramer, formerly Assistant Chief Engineer of the combined department, was appointed Chief Engineer of the newly created Inspection Department.

Mr. Myer, who has been active in testing activities both at the Cleveland and Los Angeles Laboratories for nearly nine years replaces Kendall H. Flint who resigned.

Mr. Cramer will have served ten years with the Laboratories in January and has held responsible positions associated with testing, inspection, research and requirements activities for the major portion of his Laboratories' career.

Gas Companies Merged

Sale of the Western Kentucky Gas Company to W. T. Stevenson, of Owensboro, owner of the Owensboro Gas Company, has been announced by L. E. Ingham, vice president of the Kentucky Natural Gas Corporation. The Western Kentucky Gas Company was a wholly-owned subsidiary of the Kentucky Natural Gas Corporation.

Simultaneously, Mr. Stevenson announced a merger of the Owensboro Gas Company and the Western Kentucky Gas Company effective as of November 1st. The merged concerns will be operated thereafter as the Western Kentuckly Gas Company.

Mr. Stevenson, who was president of both the Owensboro Gas Company and the Western Kentucky Gas Company, will be president and treasurer of Western. Other officers are J. L. Bugg, vice president and general manager; J. W. Gilbert, vice president; Miss Priscilla Head, secretary; J. R. McCandless, assistant treasurer; and Carroll E. Byron, assistant secretary. Directors are Mr. Stevenson, Mr. Bugg, Mr. Gilbert, Miss Head and Mr. Byron.

All present employees of both concerns will be retained in their present capacities. The general offices of the company are located in Owensboro, Ky. J. W. Gilbert and Roy LeBaron will continue in charge of the operations of the company in Owensboro. District offices and appliance stores are maintained at Owensboro, Madisonville, Greenville, Princeton, Franklin, Glasgow, Bowling Green, Hopkinsville and Russellville.

Memphis Natural Gas Co. Wins U. S. Supreme Court Decision

On October 8th, the Supreme Court of the United States, denied the writ of certiorari sought by the State of Louisiana in the Memphis Natural Gas Co. case.

Originally, the Federal Power Commission dismissed an application of the Memphis Company to extend its service so as to provide gas from Louisiana fields to the City of Memphis, Louisiana and the coal interests having urged the dismissal on the grounds that the use to which the gas was to be put was an "inferior" one. Subsequently, however, on application of the Memphis Company and the INGAA, the FPC granted a rehearing, announced that evidence regarding so-called "inferior" and "superior" uses for the fuel would not be heard, and after the rehearing granted the application.

Louisiana then appealed to the Fifth Circuit Court of Appeals, and after that Court refused to support the State, Louisiana petitioned the Supreme Court for the writ of certiorari. By denying this petition, the Supreme Court refuses to hear the case and thus makes effective the FPC final decision granting the Memphis application.

This ordinarily would preclude further controversy over this matter, but Louisiana and the coal interests undoubtedly will seek to make a case for federal regulation of end use during the current FPC natural gas investigation. Thus, the industry cannot afford to lessen its interest in this controversy, and must continue to make every effort to prove that its position is in the best interests of the country.

Bellefontaine, O. Will Change to Natural Gas

The Federal Power Commission has authorized The Ohio Fuel Gas Company of Columbus, Ohio, to construct and operate pipeline facilities to bring natural gas to the City of Bellefontaine, Ohio. The city owns and operates a municipal gas distribution system and upon completion of such pipeline facilities will purchase natural gas at wholesale for resale and distribution through its own system which now distributes manufactured gas. The total estimated cost of the new facilities is $126,740.

Ohio Fuel proposes to construct, operate and maintain 93,500 feet of 5-inch gas transmission line extending from its present line terminus at Urbana, Ohio, to the municipal limits of Bellefontaine and a gas pressure and measuring station near the corporate limits of the city. In addition, the company will construct 3,500 feet of 6-inch gas line extending from the terminus of the 5-inch gas transmission line to the vicinity of the city's present gas manufacturing plant. After completion, such 6-inch line is to be owned, operated and maintained by the City of Bellefontaine.

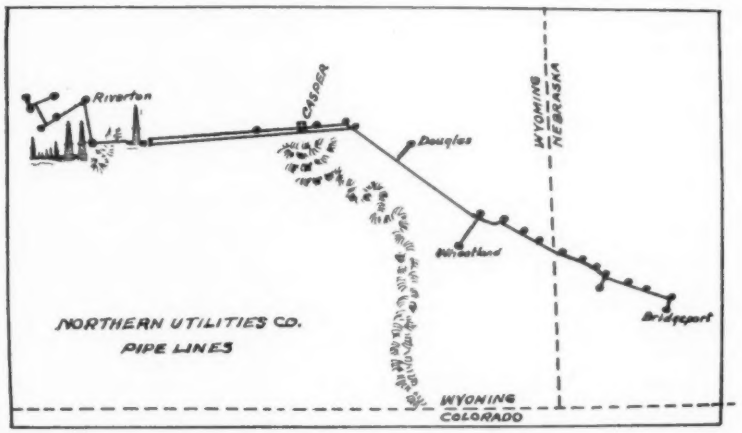
Evidence submitted at the hearing recently held in Columbus, Ohio, indicated that the municipal gas manufacturing plant is inadequate and has so depreciated that further repairs cannot be justified.

Atlanta Gas Light Co. Sale Cancelled

The contract for the purchase of the Atlanta Gas Light Company, Atlanta, Ga., by the Southern Natural Gas Company has been cancelled by mutual consent, officials of the Atlanta company announced Oct. 17th.

The cancellation followed a conference of gas company executives with members of the Georgia Public Service Commission at which commission members insisted that the two companies remain under separate ownership.

Northern Utilities Company Celebrates 25th Anniversary of Natural Gas Service



Commemorating their 25th year of uninterrupted natural gas service in Eastern Wyoming and adjoining counties in Western Nebraska, Northern Utilities Company, Casper, Wyoming, has issued an attractive illustrated brochure titled "The Constant Flame."

In addition to sketches of historical nature, it outlines the progress of this organization since 1920 when the mileage of pipe line was but 25. Today they point with reasonable pride to a service covering five counties in Wyoming and two in Nebraska served by 825 miles of pipe line. Eighteen cities and towns in Wyoming and nine in Nebraska have natural gas service. From their principal field in Fremont County the main line extends east through Casper on the North Platte River and then southeasterly with present terminus at Bridgeport, Nebraska. Branches also extend to 6 towns north of the field.

Considerable industrial business supplements the domestic demand. J. M. McIntire is president and a director of the company.

Kendall H. Flint Joins Ingersoll Steel & Disc Company

Kendall H. Flint, former Chief Engineer of Testing and Inspection at the American Gas Association Testing Laboratories, on October 1 joined the Ingersoll Steel and Disc Division of the Borg-Warner Corporation with headquarters in Kalamazoo, Michigan.

In his new position Mr. Flint will have charge of the establishment of a new gas heating division of the company which is entering the gas field for the first time, formerly having confined its heating appliance line to oil and coal.

Mr. Flint was associated with the Laboratories for nearly twenty years and in that time engaged actively in every phase of testing, inspection, and research.

Madison Gas & Electric Co. Installs New Tar Separator

The Madison Gas & Electric Co. has been issued a permit for the construction of a $9,500 addition to house a new tar separator at its gas plant.

Data on Gas and Electric Ranges from A.G.A.E.M.

Where the housewife has her choice between electric and gas ranges, she selects gas 22 to 1, according to a survey made by A.G.A. among utilities representing approximately one-half of the 20,000,000 gas meters in the U. S.

The 141 companies who supplied information estimated that there are 488,080 electric ranges in the territories where they serve 10,868,937 gas customers. On the basis of these figures, 4.54 potential gas cooking customers use electric ranges.

While 158,053 of the electric ranges in use in these territories replaced gas ranges, 53,280 gas ranges replaced electric ranges.

The results are based on approximately the same number of natural gas and of manufactured and mixed gas customers. 5,096,919 of the meters included in this study were served with natural gas and 5,201,410 with manufactured and mixed gas.

It is interesting to note the comparison of electric range saturation in territories served with various types of gas. In the manufactured and mixed gas territories surveyed, 264,399 electric ranges are in use, of which 109,578 replaced gas ranges. In the same territory, 18,486 gas ranges replaced electric ranges.

Fewer electric ranges are in use in natural gas territories. In these areas are 204,030 electric ranges, of which 42,955 replaced gas ranges. 32,954 gas ranges replaced electric ranges.

Mrs. K. Stafford to Direct Home Service at Savannah

Mrs. Katharine Stafford will direct the newly-established home service department of the Savannah Gas Company. Mrs. Stafford, who is well known in food education circles throughout the country and has had more than twenty years of experience in home economics work, will be responsible for setting up an experimental kitchen, conducting cooking classes, planning demonstrations of new equipment and methods and engaging in other types of services to the public.

Lyle C. Harvey Re-Elected President of A.G.A.E.M.

At the Annual Meeting of the Association of Gas Appliance and Equipment Manufacturers Lyle C. Harvey was re-elected president for the Association year beginning October 1st, 1945, and ending September 30th, 1946. Mr. Harvey is President of the Bryant Heater Company, Cleveland, Ohio, and Vice President and Director of Dresser Industries, Inc. He has long been recognized as one of the foremost leaders in the gas appliance industry.

The following officers were re-elected for a term of one year: Vice President, D. P. O'Keefe, President of O'Keefe and Merritt Co., Los Angeles, California, range manufacturers; Vice President, John A. Robertshaw, President of the Robertshaw Thermostat Company, Youngwood, Pa., manufacturers of control equipment; Treasurer, John Van Norden, Secretary of the American Meter Co., New York, N. Y., manufacturers of meters.

The membership of the Association has increased 35% during the war years and today it represents 90% of the production in all gas appliance and equipment fields.

E. Carl Sorby, Chairman "CP" Group of A.G.A.E.M.

E. Carl Sorby, Vice-President of Geo. D. Roper Corporation, has been elected Chairman of the "CP" Group of Gas Range Manufacturers of the Association of Gas Appliance & Equipment Manufacturers, H. Leigh Whitelaw, Managing Director of the Association, has announced. A. B. Ritzenthaler, Vice-President of The Tappan Stove Company, was elected Vice-Chairman of the "CP" Group.

E. Carl Sorby

Elected to the "CP" Executive Committee were—Lloyd C. Ginn, American Stove Company; Henry Honer, Western Stove Company; R. S. Agee, Roberts & Mander Stove Company; John C. Pankew, Detroit-Michigan Stove Company; John E. Bogan, Cribben & Sexton Company; H. C. Erhard, Standard Gas Equipment Corporation; R. B. Hurt, Hardwick Stove Company, and D. C. Ferguson, Clare Bros. & Company, Ltd.

American Stove Co. Offers Prize Contest

A contest which should serve to greatly solidify the position of cooking-by-gas in the modern home has been announced by the American Stove Company.

This contest, which is unique in that it represents the first time a manufacturer has offered the ultimate user an opportunity to submit concrete, over-all suggestions covering future design of a home appliance, is open to the general public and features $18,000 in cash prizes.

Contestants—anyone residing within the continental United States may enter—are required to submit designs for the "Gas Range of Tomorrow." The Architectural Forum is acting as sponsor, with George Nelson, of the American Institute of Architects, as professional advisor.

Few limitations are imposed on the designs. The stove, of course, must be one of style and beauty that will fit into the general scheme of the home of tomorrow. In addition to the over-all design and appearance, there is also the problem of new features to be incorporated in the range, which make the job of cooking more convenient and enjoyable. Suggested models must be practical for volume production.

Designs may show a radical departure from existing practice, or may involve only slight modifications. If desired, a series of designs may be submitted, ranging from slight modification of current models to a type completely different in construction, appearance, and arrangement.

Cash awards are broken down as follows: 1st prize, $5,000; 2nd prize, $3,000; 3rd prize, $2,000; three prizes of $1,000 each; and 10 prizes of $500 each.

Awards will be judged by a group of leading architects, designers, and home economic experts. Contestants may submit drawings in black and white, or in color. There are no limitations on either the scale or types of drawings submitted, although they must be on 18 x 24 inch sheets.

The only persons not eligible to enter the contest are employees of the American Stove Company, its subsidiaries, its advertising agencies, The Architectural Forum, and families of such employees, or employees of other range manufacturers. The contest opens in November and closes March 1, 1946.

Competition booklets, which also incorporate the basic technical data required in initiating a design, may be obtained by writing to George Nelson, A. I. A.,, c/o The Architectural Forum, Department P-1, Empire State Building, 350 Fifth Avenue, New York 1, New York.

R. H. Jenney Joins Service Organization at Louisville

Russell H. Jenney has resigned from his position with Kentucky West Va. Gas Company, as superintendent of gas measurement, to become director and chief consultant of Measurement and Control Service, Louisville, Ky.

R. H. Jenney

Mr. Jenney was educated at Rose Polytechnic Institute and has been with the Kentucky West Va. Company for seventeen years. During these years he has done a great deal of research in the measurement and control of gases and liquids. Also, assisting in the standardization of gas measurement by orifice meter.

This new engineering service is divided into three separate divisions, Gas Utilities, Oil Refining and Chemical Processing. He is offering these industries a complete engineering service on measurement and control problems together with other related problems.

MODEL ALL-GAS HOME IN MINIATURE HOLDS INTEREST. Viewing with interest Surface Combustion's model all-gas home at A.G.A.'s Regional Planning meeting in Portland, Ore., October 10, are, from left: Chairman R. G. Barnett of Portland Gas & Coke Company, who is also an A.G.A. director; H. Preston Morehouse, Public Service Electric & Gas Company of Newark, N. J.; F. W. Williams, secretary, A.G.A. residential section; E. O. Olsen of Servel, Inc.; Elmer Cone of Ruud Mfg. Company; Arthur Staat of Natural Gas Equipment, Inc., San Francisco; O. A. Stevenson & C. W. Steele, Portland Gas & Coke Co.

COMPLETE GAS PLANTS

INDUSTRIAL FURNACES

THE GAS MACHINERY CO.

16100 Waterloo Road

Cleveland 10, Ohio

CONNELLY IRON SPONGE

High in efficiency . . . low in cost. In hundreds of plants throughout the country, Connelly Iron Sponge has proven itself . . . the finest purification material on the market. Not only does it lower your purifying cost but its high activity and capacity tends to reduce distribution and service complaints because of the cleaner gas which ultimately lowers operating and maintenance costs

If you have a problem in gas purification, Connelly's 68 years of experience is at your service. Our engineers can help you . . . there is no obligation on your part.

CONNELLY IRON SPONGE & GOVERNOR CO.

ELIZABETH, N. J. LOS ANGELES, CALIF

3154 SOUTH CALIFORNIA AVE., CHICAGO 8 ILL.

Geyer Explains Gas Heating Code to Plumbing Inspectors

The advantages that accrue to municipal plumbing inspectors and the simplification of their duties that results from the American Gas Association testing and approval program for water heaters and heating systems was the subject of a talk given at the 16th annual convention of the Pacific Coast Plumbing Inspectors Association at Hotel Clark, Los Angeles, October 9 to 12, by H. W. Geyer, utilization engineer, Southern Counties Gas Co., Los Angeles.

Mr. Geyer outlined the A.G.A. testing and approval program, explained the purpose for which the A.G.A. Approval Committee was established and described the operations of the A.G.A. testing laboratories in Los Angeles and Cleveland.

Mr. Geyer, who as a member of the plumbing inspectors' association uniform code committee, has contributed valuable service in drafting the code sections pertaining to gas fittings and water heaters, declared that the officials of many cities who accept A.G.A. approval standards for water heaters and heating systems are unaware of the comprehensive work entailed in determining whether an appliance meets A.G.A. standards and specifications.

A water heater, for instance, Mr. Geyer pointed out, is given some 300 different checks, tests and counterchecks in its passage through the A.G.A. testing procedure.

He emphasized also that the makeup of the A.G.A. Approval Committee is not confined to members of the gas utility and appliance industries. There are included on the committee, he said, representatives of the National Association of Master Plumbers and national heating groups, in addition to nearly 100 individual members of the plumbing, heating and water heater industries. This broad industry representation, he pointed out, gives the plumbing industry a direct voice in determining the qualifications of water heaters and heating systems, in the installation of which they play an important role.

Reviewing some of the benefits plumbing inspectors receive as a result of the A.G.A. testing and approval program, the Southern Counties Gas Co. engineer cited the fact that, since all technical and construction aspects of the appliances have already been checked and approved by the A.G.A. committee before the units are installed, the work of municipal plumbing inspectors is simplified to the point where they are required only to make sure that the installation is made efficiently. A.G.A. approval, he added, covers the appliance and its construction only, and not the installation thereof.

Maytag Will Add Gas Range and Clothes Drier to Products

Addition of an automatic type washer, and automatic clothes drier, both gas and electric, a gas range and an electric frozen food locker to the Maytag line of household appliances is reported by President Fred Maytag II, Maytag Co., Newton, Ia.

The Maytag Company recently purchased a minority interest in the Globe-American Corporation of Kokomo, Indiana, which will produce Dutch Oven gas ranges exclusively for Maytag. Fred Maytag II, and Maytag Vice Presidents George Umbreit and Roy A. Bradt have been elected to the Globe-American board.

Nesbitt Returns to Oil-O-Matic in New England Field

John E. Nesbitt has resumed his duties as a New England district representative for Oil-O-Matic, according to an announcement by W. A. Matheson, vice president in charge of the Williams Oil-O-Matic Division, Eureka Vacuum Cleaner Company. Since July 1942, Mr. Nesbitt has served with the Army Air Force and held the rank of major at the time of his discharge.

C. G. Allen on Research Staff of Bryant Heater Co.

Bryant Heater Company, Cleveland, announces the appointment of C. G. Allen to its research and development staff. A graduate of Case School of Applied Science in metallurgy, Mr. Allen will devote his efforts primarily to experimental work in the development of new domestic gas heating equipment.

Associated with the American Stove Company and later the Testing Laboratories of the American Gas Association, Mr. Allen joined the U. S. Army Air Corps in the spring of 1941 and received his commission in December of the same year. He served in the European and Asiatic theaters for two and a half years.

Ruud Manufacturing Company Announces Appointments

A. J. Strain has been appointed by Ruud Manufacturing Company, Pittsburgh, Pa., as General Manager of the Toronto plant.

A chemical engineer by profession, Mr. Strain has a broad record of accomplishment in the electrical field as well as in the gas business. He worked for several years with The Canadian General Electric Company on design and sales of all types of

A. J. Strain

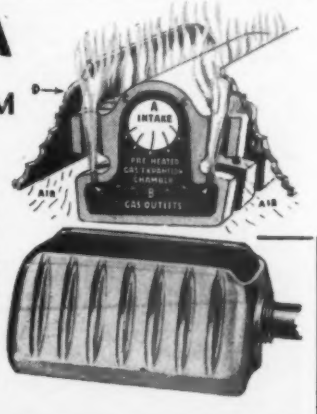
heating equipment. He also had an important part in the construction and putting into operation of The Hobbs Manufacturing Company safety glass plant at London, Ont. Latterly, Mr. Strain has been well-known in his connection as Sales Manager of The United Gas & Fuel Company, Hamilton, and until joining The Ruud Company, as Superintendent of Domestic Sales, Consumers' Gas Company, Toronto, Ont.

Henry M. Taylor has returned to The Ruud Company in the capacity of District Manager for the State of Iowa. Mr. Taylor filled this same position with Ruud before the war but during wartime was on loan to the United States Department of Commerce.

Prior to taking charge of sales in the Iowa territory in 1934 he capably filled the District Managership in Louisiana and in Missouri. Mr. Taylor's faithful service with the Ruud organization dates back to 1923.

COLUMBIA
LITTLE GEM
GAS BURNER

A small unit which may be used singly or in series. Each unit 6½ in. long x 4 in. wide. Wide application of domestic and commercial uses. May be used in round or square steam or hot water boilers, warm air furnaces, Arcola type heaters and circulating heaters. Used commercially for heating tanks, boilers, ranges, ovens, etc. Natural, manufactured, or mixed gas. Complete combustion without pre-mixing. Write for circular.



COLUMBIA BURNER CO.
729 Ewing Street
Toledo 7, Ohio

"JOURNAL" GAS FLOW COMPUTERS

High Pressure
RANGE:
Cu. Ft. of Gas Per Hour—100-10,000 M
Diameter of Pipe—Inches ¾-30
Difference in Absolute Pressure—Lbs. per sq. in., 1-500
Sum of Absolute Pressures—Lbs. per sq. in., 2000-20
Specific Gravity—1.5-.35
Length of Pipe—Feet 100-5000
Length of Pipe—Miles 1-250

Low Pressure
RANGE:
Cu. Ft. of Gas Per Hour—10 to 500 M
Pipe Diameter—¾" to 48" (including standard and actual weight up to 4")
Pressure Loss—Inches .01-10
Length of Pipe—Feet 30-30,000
Specific Gravity—1.5-.35
Constants—1400-1000

Made of durable celluloid, encased in a convenient leatherette cover with complete instructions. Actual size 6¼ x 7½

3.50 Each Postpaid

American Gas Journal
53 Park Place, New York 17

SIR DAVID MILNE-WATSON

Sir David Milne-Watson, Bart., seventy-six, gas and associated industries expert, died October 3rd at his home, Asheley Chase, in Abbotsbury, Dorset.

Sir David, born in Scotland, long was a leading figure in the British gas industry. As governor of the Gas Light & Coke Company he headed a company which supplies millions of people in the London area with gas. He served as president of the National Gas Council and was chairman of many other organizations. Keenly interested in military training, he was an honorary colonel of the 12th Battalion of the London Regiment, known as the Rangers, a corps composed almost entirely of his company's employees.

WILLIAM H. TAYLOR

William Henry Taylor, sixty-five, former president of the Philadelphia Electric Company, died Oct. 9th at his home, Ventnor, N. J.

Mr. Taylor was a native of Ashley, Pa., and began his public utility career upon his graduation from Stevens Institute of Technology, Hoboken, in 1903, when he became a construction engineer with the United Gas Improvement Company.

Virtually his entire business career was with United Gas Improvement or its various subsidiaries, with which he served in executive capacities.

In 1920 he became associated with the Georgia Railway and Power Company, of Atlanta, and was its vice-president until 1927. He became president and a director of the Philadelphia Electric a year later and served in that capacity until he retired in April, 1940.

E. J. SHERMIRE

E. J. Shermire, Sales Manager of Carland Commercial Equipment, Detroit-Michigan Stove Company, died suddenly October 3 in Birmingham, Alabama.

Mr. Shermire became associated with Detroit-Michigan Stove Company in 1936 as a district manager. In May, 1939, he was appointed Sales Manager. Prior to his affiliation with that company, he was engaged in the hotel and restaurant equipment business in St. Louis, Missouri, and in the south and southwest. Mr. Shermire was active in industry affairs and served on several committees in the industry's associations.

American-Standard Appoints P. M. Gish

The American Radiator & Standard Sanitary Corporation has appointed Perry M. Gish Assistant General Traffic Manager, to succeed Thomas J. McLaughlin, deceased. The appointment became effective October 1st.

Mr. Gish started with the Company in their Minneapolis office in 1919 and has held various positions with the Company in Minneapolis, Buffalo, New York and Pittsburgh. In 1940 he was transferred from New York to the General Offices of the Company in Pittsburgh where he will remain in his new position.

Kneen and Landis Elected Vice Presidents by Lincoln Electric

Mr. H. F. Kneen has been named Vice President in charge of manufacturing, and Mr. G. G. Landis, Vice President in charge of engineering for The Lincoln Electric Company, Cleveland, Ohio.

Mr. Kneen joined The Lincoln Electric in 1929, a few years after graduating from Cornell University where he received a Master's Degree in industrial engineering.

H. F. Kneen G. C. Landis

Promoted from his original position of assistant plant superintendent to general plant superintendent in 1931, Kneen has been largely responsible for carrying out the policies of the widely-known incentive plan instituted by the company's President, Mr. J. F. Lincoln, over a decade ago.

Mr. Landis is a veteran of over 20 years with Lincoln Electric. He received his electrical engineering education at Ohio State University and graduated with a Bachelor of Science degree in 1922.

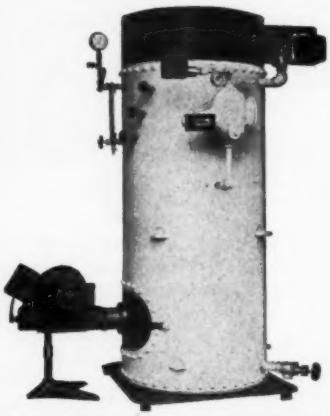
After two years with several large electrical companies, he resigned to enter the laboratories of Lincoln Electric in 1924, and was promoted to chief engineer in 1930. Many patents on both arc welding and electric motors have resulted from his genius in the electrical engineering field.

Vice President Landis is a director of the company and has complete charge of the design and production engineering on welding equipment manufactured by the company.

Airtemp Div. of Chrysler Appoints J. J. Donovan

Appointment of J. J. Donovan, formerly New York regional manager of Airtemp Division, Chrysler Corporation, as Eastern Divisional Manager for the company was announced here by D. W. Russell, president. Donovan's increased responsibility calls for coordination of all merchandising effort in the Boston, New York, Philadelphia and Washington regions, included in the eastern division.

LATTNER
GAS — OIL BOILER
3 HP to 35 HP.



Burns natural gas or regular furnace oils with equal efficiency using same burner.

P. M. Lattner Mfg. Company
Cedar Rapids, Iowa

CLEVELAND

"A" TYPE METERS
"B" TYPE METERS
DIAPHRAGMS

Cleveland Gas Meter Co.
ESTABLISHED 1875
2009 Rockwell Ave., Cleveland 14, O. Phone CHerry 2351

BARBER
Gas Pressure
REGULATORS

Sizes ¼" up
Certified by
A. G. A. Testing
Laboratory
Write for Prices

THE BARBER GAS BURNER CO.
3704 Superior Ave., Cleveland, O.

INDEX TO ADVERTISERS

American Meter Co. 8-9
American Radiator & Standard Sanitary Corp. —
American Stove Co. ..... —
Assn. of Gas Appliance and Equip. Mfrs. ... 40

Barber Gas Burner Co., The 74
Blaw-Knox Company ..... —
Bryant Heater Co. ..... Front Cover
Buell Engineering Co. ..... —

Cast Iron Pipe Research Ass'n. The 24-25
Clark Bros. Co. ..... —
Cleveland Gas Meter Co. 74
Cleveland Heater Co. ..... —
Cleveland Trencher Co. 66
Columbia Burner Co. 73
Connolly Iron Sponge & Governor Co. 72
Cooper-Bessemer Corporation ..... —
Crane Company ..... —
Cruse-Kemper Co. 62

Detroit-Michigan Stove Co. 44
Dresser Mfg. Div., Dresser Industries 23

Estate Stove Co. 57

Gas Machinery Co. 72
Gas Purifying Materials Co. 61
General Coal Co. 6
General Gas Light Co. ..... —

Harper-Wyman Co. 19-20

Lambert Meter Co., Inc. 61
Lattner Mfg. Co., P. M. 74
Lavino & Co., E. J. 7
Lincoln Electric Co. 63

Merco-Nordstrom Valve Co. 2
Metric Metal Works 8-9

Norton Company 26
Norwalk Valve Co. 53

Pacific Gas Corp. 12
Payne Furnace & Supply Co.
Division Dresser Industries 65
Pittsburgh Equitable Meter Co. 2

Reynolds Gas Regulator Co. 60
Robertshaw Thermostat Co. ..... —
Roper Corp., Geo. D. ..... —
Ruud Manufacturing Co. 49

Safety Gas Main Stopper Co. 22
Semet-Solvay Engineering Corp. 3
Sellers Engineering Corp. 34
Servel, Inc. 4-5
Skinner Co., M. B. ..... —
Smith Corporation, A. O. 77
Sprague Meter Co. ..... Back Cover
Stacey Bros., Div. Dresser Industries 33, 39
Superior Meter Co. 64
Syntron Co. 54

United Engineers & Constructors, Inc. 10

Vulcan Proofing Co. ..... —

West Gas Improvement Co. ..... —
Whitehead Metal Products Co. 49

POSITIONS OPEN

Assistant Gas Supt.

A Mid-eastern Gas Company has opening for experienced Assistant Gas Supt. Prefer man experienced in Manufactured Gas Operations and Maintenance to assist Gas Supt. in the operations of the property. Some distribution experience desirable but not absolutely necessary. Reply giving full details of Education, Experience, Salary and date available. Address Box 146, c/o American Gas Journal, Inc., 53 Park Place, New York City 7.

DRAFTSMEN: Experienced on Piping Layout for Manufactured Gas Plants. Ebasco Services Incorporated, Two Rector Street, N. Y.

Dresser Industries Acquires Security Engineering Co.

Acquisition of Security Engineering Company, Inc. of Whittier, California, by Dresser Industries, Inc., was effected November 1, 1945 with the issuance of Dresser common stock to the holders of Security common stock, H. N. Mallon, Dresser president has announced. The exchange was on the basis of one share of Dresser for 1¾ shares of Security.

This company is widely known as a manufacturer of rock roller bits for substrata drilling operations. It also manufactures oil field tools, specialties, and a patented metal for oilwell liners.

Imperial Oil of Canada Elects New Officials

Henry H. Hewetson was elected president of Imperial Oil Limited, Canadian affiliate of Standard Oil Company (N. J.) on October 17. He succeeds the late R. V. LeSueur, president and chairman of the board of directors, who died September 6.

At the same time, Imperial elected Frank W. Pierce of New York, a director, to be chairman of the board of directors. Mr. Pierce also is a member of the board of Standard Oil Company (N. J.)

J. R. White, director, was elected a vice president and will succeed C. A. Eames, who will retire shortly. F. G. Hall, general sales manager, was elected to the board of directors.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, of American Gas Journal, published monthly at East Stroudsburg, Pa., for October, 1945.

State of New York } ss.
County of New York }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared S. G. Krake, who, having been duly sworn according to law, deposes and says that he is the Manager of the American Gas Journal and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations.

1. That the names and addresses of the publisher, editor, managing editor and business managers are: Publisher, American Gas Journal, Inc., 53 Park Place, New York City; Managing Editor, S. G. Krake, 53 Park Place, New York City; Business Manager, H. T. Matthew, 53 Park Place, New York City.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) S. G. Krake, 53 Park Place, New York City.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom said trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is ——. (This information is required from daily publications only.)

S. G. KRAKE,
Manager.

Sworn to and subscribed before me this 15th day of October, 1945.

(Seal.) MARY E. KELLEHER.

(My commission expires March 30, 1946.)

Col. White Appointed Director Promotional Bureau A.G.A.

Appointment of Colonel John H. White, Jr., of Rochester, N. Y., as director of the newly-established Promotional Bureau of the American Gas Association was announced by D. A. Hulcy, chairman of the Promotional Committee, at the Association's Annual Meeting in New York, October 25. Col. White, who has been on active duty since February 11, 1942, will join the Association's headquarters' staff in New York on December 1.

The Promotional Bureau, which has been set up under the enlarged Gas Industry Research and Promotional Plan, will develop and conduct industry-wide sales promotional programs. It is expected to augment and coordinate the Promotional work of the Association with gas utility companies, appliance manufacturers and related industries.

Col. White entered the gas utility business in January, 1934, when he was placed in charge of the Brockport office of the Rochester Gas and Electric Corporation. While in that position he directed a number of outstanding sales campaigns, one of which resulted in his office winning the nationwide A. G. A. sales contest on automatic gas water heaters.

Pittsburgh-Equitable Votes Change in Name

Col. Willard F. Rockwell, chairman and president of the Pittsburgh Equitable Meter Co., recently announced that the directors had voted to recommend to shareholders to change the company's name to the Rockwell Manufacturing Co., "due to the greater diversification of manufacturing activities resulting from recent acquisitions." Five of the company's 10 subsidiaries were acquired since January 10.

This action does not eliminate the Pittsburgh Equitable Meter Co., the Merco Nordstrom Valve Co., or other companies which are subsidiaries of the Pittsburgh Equitable Meter Co. at present, which will continue as subsidiaries of the Rockwell Manufacturing Co.

Col. Rockwell also announced plans for expansion which involve the spending of several million dollars.

T. A. Crawford Elected President I.C.I.

At the 2nd annual meeting of the Indoor Climate Institute held at the Book-Cadillac in Detroit, Oct. 17th, T. A. Crawford, General Manager of Timken Silent Automatic Division, Timken-Detroit Axle Company, was elected President, succeeding Paul B. Zimmerman, who has held the office since inception of the Institute. L. N. Hunter of The National Radiator Company was made 1st Vice-President; R. E. Moore of Bell & Gossett Company, and E. N. McDonnell of McDonnell and Miller, were re-elected secretary and treasurer, respectively.

"America is on the threshold of the greatest home-building and modernization era in the history of the country," stated Crawford. "The heating and air conditioning industries will be called upon to introduce into the American homes the full benefit of a wide range of equipment, which will raise the standard of living through technological developments. The Indoor Climate Institute for the past three years has been analyzing the many phases of the related industries which contribute to controlled indoor climate. As the first step in providing the public with unprejudiced information on the subject of heating and cooling for the home, the Institute has launched a program based on the idea of automatically-fired central heating systems. It is a startling fact that 9 out of 10 homes in the United States are without automatic heating, in fact, nearly half of the homes, or 19 million, are using stoves. A very understandable consumer booklet dealing with central heating systems of all types burning gas, oil or coal will, for the first time, provide the public with information which will be most helpful to the new home builder and in the modernization of old homes. The booklet will contain the best thinking of the various trade associations composing the heating industry. The nation-wide distribution of the booklet by the Indoor Climate Institute and its membership will prove a definite incentive for home owners and building contractors to turn to the heating contractors and installing dealers for more information on heating systems tailored to heating requirements."

It is reported that Indoor Climate Institute will, in the near future, also take under consideration the development of a national advertising campaign and promotional activities which will focus the attention of the public and all allied groups in the building industry upon the vital subject of greater indoor comfort and health through adequate, properly installed, automatically-fired central heating systems in the home. Controlled indoor climate has been defined by the Institute as the 4th Dimension in Living, ranking in importance with food, clothing and shelter.

At the annual meeting the following representative cross-section of the leaders in the allied heating and cooling industries were elected to the Board of Directors: Paul K. Addams, Fitzgibbons Boiler Company, Inc.; A. T. Atwill, Quaker Manufacturing Company; C. T. Burg, Iron Fireman Manufacturing Company; Thomas Byrd, The Lau Blower Company; R. C. Cameron, Chrysler Corporation, Airtemp Division; Bruce T. Cunningham, Research Products Corporation; J. K. Knighton, Servel, Inc.; C. E. Lewis, Perfex Corporation; C. D. Lyford, Minneapolis-Honeywell Regulator Company; J. M. McClintock, Freeman Stoker Division, Illinois Iron & Bolt Company; J. P. McIlhenny, Air Conditioning Department, General Electric Company; Joseph R. Murphy, Taco Heaters, Inc.; C. A. Olsen, The C. A. Olsen Manufacturing Company; Gordon Rieley, The Bryant Heater Company; Jack Searls, White-Rodgers Electric Company; and Martin Weil, Weil-McLain Company.

Syntron Appoints Armstrong District Manager

The Syntron Company, Homer City, Pennsylvania, has appointed J. A. Armstrong as District Manager of the company's sales and engineering service on their line of Vibratory Material Handling equipment for the State of Michigan, with the exception of the Detroit Metropolitan Area, with headquarters in Lansing.

J. A. Armstrong

He will also supervise the sale of Syntron Portable Electric Tools and Self-Contained, Gasoline Hammers in the same area. Mr. Armstrong has had wide experience in machinery and equipment design and installation work.

Connelly Iron Sponge Co. Directive Personnel

Connelly Iron Sponge and Governor Company, a pioneer in the manufacture of gas purifying materials for the manufactured gas industry since 1865, announces arrangements for supervisory and other services of Stone & Webster Service Corporation.

Connelly had an important part in connection with the atomic bomb project and also erected a plant in Los Angeles to supply iron sponge for use of the Rubber Reserve Corporation in connection with butadiene manufacture.

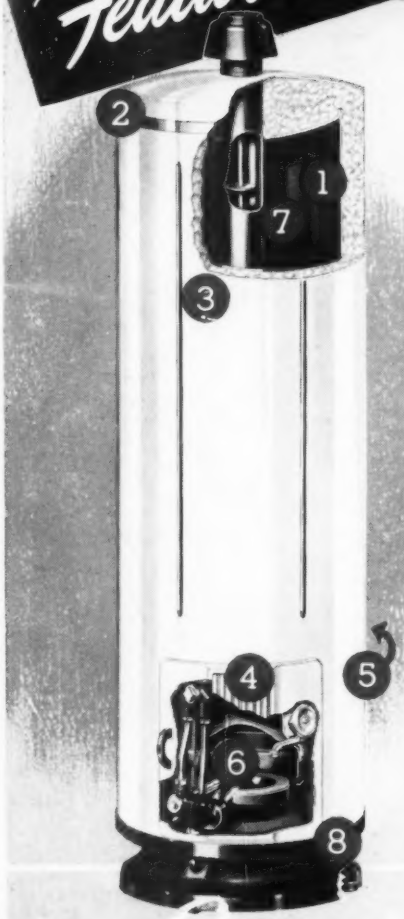
General operations of the company are under the direction of A. L. Smyly, president, in Chicago. D. K. Taylor is in charge of operations of the Chicago plant. The Los Angeles plant is directed by J. J. Cuddihy. Elizabeth plant operations are under Ellsworth Ungethuem.

Gas Welding Accessories. An up-to-date price list and catalog of Airco gas welding and cutting supplies and accessories has recently been published by Air reduction, 60 East 42nd Street, New York 17, New York. This 16-page booklet contains illustrations, descriptions, engineering data, and current prices.

Features that challenge comparison

in the

Permaglas water heater



There's Only One

Glass-Fused-to-Steel

1 **Permaglas** . . . the glass-fused-to-steel lining . . . sparkling blue, mirror-smooth, sanitary as a clean drinking glass. There is only *one Permaglas!*

2 **Beauty of Design** . . . gleaming white with all decorative trim of polished stainless steel.

3 **Neotone White Enamel** finish . . . inside and outside of exterior shell protected by enamel-baked-on-steel. Easy to keep glistening *clean!*

4 **Hidaway Controls** . . . all controls concealed behind a convenient door, yet readily accessible. The *Swing-Drain Faucet,* too, is located here, ready for use when needed.

5 **Rear-Vu Connections** . . . no unsightly piping on top of heater . . . eliminates condensation drip on heater . . . a truly modern gas installation.

6 **Uniflow Gas Burner** . . . the most efficient automatic type yet developed. Clean, sharp, even combustion over entire burner ring.

7 **Monoquad Construction** with Tru Center Flue . . . assures greater strength and longer life.

8 **Pyramid Base** . . . sturdy and practical, provided with adjustable jacks to level heater on uneven floors and take weight off pipe connections.

A GREAT AID TO SALES

With SMITHway *Permaglas* Water Heaters you have the most dramatic *new* sales story in the home-appliance business! • Single-piece, *glass-lined* tank • Sanitary as a clean drinking glass • Freedom from all tank rust and corrosion • No "corrosion-dirt" in the bath . . . no "tank spots" on clean clothes • Sparkling clean hot water as pure as the source itself.

SMITHway Water Heaters, lined with *Permaglas,* deliver hot water as sparkling clean as the water source itself! There's no tank rust or corrosion because *Permaglas can't* rust or corrode.

Get the PERMAGLAS Story Now!

Send today for the complete details . . . get the booklet, "The Inside Story of Permaglas"—the *new* story that's packed with sales appeal.

Heated with Gas . . . Stored in Glass

SMITHway *Permaglas* WATER HEATERS

A.O. SMITH Corporation

NEW YORK 17 • PITTSBURGH 19 • CHICAGO 4 • TULSA 3
HOUSTON 2 • DALLAS 2 • LOS ANGELES 14 • SEATTLE 1
INTERNATIONAL DIVISION: MILWAUKEE 1—*In Canada:* JOHN INGLIS CO., LIMITED

THE SPRAGUE METER CO. BRIDGEPORT, CONN.

DAVENPORT, IOWA • LOS ANGELES, CALIF. • HOUSTON, TEXAS • SAN FRANCISCO, CALIF.